1-1-2013

Differential Effects of the Great Recession on Minority Populations

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DIFFERENTIAL EFFECTS OF THE GREAT RECESSION ON MINORITY POPULATIONS

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Bachelor of Science
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Submitted in Partial Fulfillment of the requirements

For the degree of Doctor of Philosophy in

Health Services Policy & Management

Arnold School of Public Health

2013

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DEDICATION

This is dedicated to all those that helped along the way, whether their help was recognized or not…Thank you for your support & instruction.

ABSTRACT

Times of severe economic flux may burdend individuals at differing levels. The Great Recession affected individuals differently by racial group. Vulnerable individuals who may already be burdened by economic strains and health disparities may benefit from state policies that work to improve the health and health care access of individuals. Medicaid Generosity for parents or childless adults is associated with differences in individuals' health status and reporting forgone medical care. Individuals in states that have higher levels of Medicaid eligibility defined as eligibility in relation to the percent of the Federal Poverty Level report lower levels of poor or fair self-reported health status and lower rates of reporting forgone medical care. State policy makers should investigate these associations when considering modification to their states Medicaid Policies.

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CHAPTER 1

INTRODUCTION

Differential Effects of the Great Recession on Minority Populations

The sustained economic downturn of December 2007 – June 2009 is also known as the Great Recession (hereafter, the Recession) (BLS (a), 2012)[1]. In the US, the annual average unemployment rate (civilian labor force 16 years and over) fluctuated from 6.0% in 2003, 5.5% in 2004, 5.1% in 2005, to a low of 4.6% for both 2006 and 2007; while rising dramatically in 2009 to 9.3% reaching a high of 9.6% in 2010 and finally dropping to 8.9% in 2011 (BLS (b), 2012)[2]. As of December 2012, the national unemployment rate had fallen to 7.7% (BLS (c), 2012)[3]. This document will provide background evidence that explores the relationship between employment and access to health care throughout seven years ending in 2010. It will also identify background on the links between income (for individuals and their communities), health care insurance coverage and health status, with a particular focus on vulnerable populations. Vulnerable individuals may be more likely to experience negative consequences (higher unemployment or underemployment and lower socioeconomic status which may add to the following: barriers in accessing needed health care service and utilizing these services and poorer health outcomes for both physical and mental health) in times of economic downturns.

The topic to be examined is the effects of the economic Recession on health, healthcare utilization and access to healthcare across differing racial and ethnic groups. State-level Medicaid coverage policies (differences in eligibility defined as the Percent of Federal Poverty for parents and childless adults) and state-level income inequality will be assessed for their potential moderating or exacerbating effects on these outcomes.

Disparities in health, utilization and access, in general have historically been present for vulnerable populations. Non-White populations in the US are more likely to report having unmet health needs, and "to forgo needed medicines" when compared to White populations (Lasser et al., p1305, 2006)[4].

Socioeconomic inequities are present by race and ethnic categories. In some states Black and Hispanic populations lived in areas that had higher levels of poverty when compared to White populations. In Massachusetts and Rhode Island 53.0% and 55.8% of Hispanic individuals and 50.4% and 56.0% of Black individuals lived in areas (Census Track) that had between 20% and 100% poverty rates, while only 7.7% and 8.2% of White individuals lived in these same areas within the two states, respectively in 1990 (Krieger et al., p 1659, 2003)[5]. These measures of economic deprivation in addition to others (i.e. Gini Index) have been shown to be "sensitive to expected socioeconomic gradients in health" (Krieger et al., p. 1655, 2003). Areas with the highest income inequality (Gini Index, between 0.429 and 0.650) had higher rates of premature mortality (for those less than 65 years old, per 100,000) for White individuals, Black individuals, Hispanic individuals, Asian/Pacific Islander individuals and American Indian individuals (Krieger et al., p. 1663, 2003). Whites individuals (347.1) had lower rates than both Black individuals (642.6) and American Indian individuals (380.4) for premature

mortality for the years 1989 - 1991 in areas with the highest income inequality (Kriger et al., p. 1663, 2003). In 2011, 13% of White individuals, 35% of Black individuals and 33% of Hispanic individuals were living below the federal poverty rate in 2011 across the entire US (Urban Institute and Kaiser Commission on Medicaid and the Uninsured (a), 2012)[6].

Black and Hispanic workers (compared to white workers) may be more likely to be adversely affected, as measured through unemployment, by the Recession (Hoynes et al., 2012)[7]. In addition, Black and American Indian populations have worse outcomes when compared to White populations across several health outcome measures (Office of Minority Health, 2012a)[8]; (Office of Minority Health, 2012b)[9]; (Braveman, 2010)[10]. Analysis that adjusts for socioeconomic status is appropriate to study differences in several health outcomes (i.e. health status) for some race and ethnicity groups (Braveman, 2010); (Braveman et al., 2005)[11].

Much of the previous research on the Recession is limited to major race/ethnicity categories and does not estimate effects for smaller minority subgroups including Asian and American Indian and Alaska Native (AIAN) populations (see Table 1). The proposed research will identify more specific & more accurate race and ethnicity categories (i.e. White, Black or African American, Asian, American Indian and Alaska Native (AIAN), and Other).

Table 1.1. Examples of studies using limited racial and ethnic groups.

Author	Topic/Title	Race & Ethnicity Categories
Hoynes et al., 2012	Who Suffers During Recessions?	White, Black, Hispanic & Other
Nichols and Simms, 2012[12]	Racial and Ethnic Differences in Receipt of Unemployment Insurance Benefits During the Great Recession	White, Black, Hispanic & Other
The Washington Post/Kaiser Family Foundation/Harvard University, 2011[13]	Race and Recession Survey	Whites, Blacks & Hispanics
Burgard et al., 2012[14]	Perceived job insecurity and health: The Michigan recession and recovery study	African American or non-Hispanic White

Medicaid Generosity

Having safety nets in place for vulnerable populations can reduce some effects of the Recession (Gonzales et al., 2012)[15] Government-sponsored programs focusing on vulnerable populations include Medicaid. Medicaid serves a particularly important function for vulnerable populations in the US. In general, Medicaid coverage is provided to 31 million children, also financing births for pregnant woman (40% of all births), 4.6 million low-income seniors and 3.7 million people with disabilities enrolled in Medicaid (Medicaid.gov, 2012)[16]. Finally, there are the 11 million non-elderly low–income individuals and the 8.8 million non-elderly individuals with disabilities with Medicaid coverage (Medicaid.gov, 2012). Lacking insurance may be related to poorer health outcomes. Using information collected in 1994 researchers compared Medicaid recipients

to uninsured individuals among persons (under the age of 65) in fair or poor health. They found that persons without health insurance were "less likely to have a usual source of care" when compared to those enrolled in Medicaid (Berk, p.172, 1998)[17]. Similar findings were reported for obtaining "one or more of the health care services" individuals (under the age of 65) surveyed "believed they needed during the previous year," where a larger percent of individuals without health insurance (34%) reported this barrier than those with Medicaid coverage (22%) (Berk, p.172-173, 1998).

Medicaid expansion, broadening eligibility to include individuals not previously eligible, has been associated with declines in mortality (Sommers, 2012)[18]. Persons covered under Medicaid expansion, that is, new Medicaid enrollees under Section 1115 Medicaid Waivers, related to changes based on income category, were more likely to be older, minorities and those in poorer health than the general population (Sommers, 2012); (Natoli, 2011)[19]. Vulnerable populations are those that would likely be burdened by medical expenses regardless of insurance status due to the already present economic strains (i.e. low availability of financial resources) that may prevent one from seeking care when needed (Cummingham et al., 2008)[20].

As of July 2012, at least 13 states were planning to cut Medicaid in an attempt to balance their budgets (Galewitz, 2012)[21]; (Kaiser Health News, 2012)[22]. Decision makers must have the best available evidence at hand to inform policy at the state and local level concerning Medicaid coverage.

Purpose of proposed research

Individual studies have suggested that individual health effects may be related to area-level socioeconomic factors and state Medicaid Generosity. The current study will explore these issues on a national scale, for 7 years (2004-2010), sub-setting to race and ethnic categories which prior research suggests are particularly vulnerable. In addition, we will explore possible moderators to the effects of the Great Recession and policies that have improved health-related outcomes for millions of non-institutionalized adults living in the US from 2004-2010.

We will measure access and utilization of healthcare and outcomes of health for individuals. Differences in these measures will be assessed from 2004-2010 to measure changes across time for differing racial and ethnic groups. We will also identify whether income inequality or Medicaid coverage policies affected individuals unevenly throughout this period of time. The specific research Aims to be explored are:

Aim 1: To measure whether the Recession and subsequent recovery have differential effects on general health status, poor mental and physical health days, and cost-related forgone medical care among vulnerable populations of working-age adults, defined as non-white racial/ethnic subgroups.

Hypothesis 1a: Among working age adults, poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost will be higher during the years 2008 – 2009 than during the years 2004 – 2007.

Hypothesis 1b. Among working age adults, adverse changes across the period studied in self-reported health status, self-reported days of poor mental and physical health, and

reported delay in seeking care due to cost will be higher among African American, Hispanic, American Indian/Alaska Native and Asian adults than among White adults.

Hypothesis 1c. Among working age adults, post-Recession improvement in poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost will be will be lower among African American, Hispanic, American Indian/Alaska Native and Asian adults than among White adults.

Aim 2: To measure the extent to which state-level income inequality burdens vulnerable populations.

Hypothesis 2a: Among working age adults, holding race/ethnicity constant, poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost will be higher during the years 2008 – 2009 than during the years 2004 – 2007 and as state income inequality increases poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost will increase when compared to states with lower levels of income inequality.

Hypothesis 2b: Among working age adults, holding race/ethnicity constant, poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost will be higher during the year 2010 among African American, Hispanic, American Indian/Alaska Native and Asian adults than among White adults; and as state income inequality increases poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost will be higher among African American, Hispanic, American

Indian/Alaska Native and Asian adults than among White adults when compared to states with lower levels of income inequality.

Aim 3: To measure the extent that state-level Medicaid variation in coverage (differences in eligibility defined as the Percent of Federal Poverty for parents and childless adults) affect the degree (change between three time periods: pre-Recession, during the Recession & post-Recession) to which populations were burdened.

Hypothesis 3a: Among working age adults, poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost will be lower for states with higher Medicaid Generosity (differences in eligibility defined as the Percent of Federal Poverty for parents and childless adults).

Hypothesis 3b: Among working age adults, poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost will be lower for states with higher Medicaid Generosity from the previous year and that differences for poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost among African American, Hispanic, American Indian/Alaska Native and Asian adults as compared to White adults will be smaller when compared to states without this Generosity. These changes will be assessed across 2004 - 2010 for change in poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost among African American, Hispanic, American Indian/Alaska Native and Asian adults as compared to White adults.

CHAPTER 2

BACKGROUND

2.1 RACE BASED DISPARITIES IN SOCIAL DETERMINANTS OF HEALTH

Social, economic and environmental factors play a major role in a person's overall health. Social determinants of health may include one's educational status, unemployment, income status (Marmot, 2005)[23]. In addition, access to health care services and residential segregation serve as social determinants of health (HP2020, 2013)[24]. These determinants work together in multiple ways to shape individual's health. Identifying social position, which includes race/ethnicity, allows us to distinguish between other social determinants of health (i.e. social and material environments) which also affect one's health (Graham, 2004)[25]. These social determinants of health must be explored if we are to have a more complete picture of the current health status of adults in the US throughout most of the past decade.

Education

Differences in educational attainment, specifically having less than a high school diploma, across racial and ethnic groups was identified between White working-aged adults and minority adults in 1999-2000 (Glover et al, 2004)[26]. Lower educational attainment was found for African American, Hispanic and Other working age adults in

both urban and rural areas when compared to White working age adults (Glover et al, 2004). In 2009, White adults had the highest level of education, with 90% having "at least a high school education" (Ryan & Siebens, p. 5, 2012)[27]. Black adults were behind White and Asian adults in reporting the completion of a college degree in 2009 (Ryan & Siebens, p. 5, 2012). Similarly, Hispanics adults were behind all other groups in the percent having at least "a high school diploma or equivalent" (Ryan & Siebens, p. 5, 2012). In addition, Black adults (adults refers to those aged at or older than 18) and Hispanic adults had higher percentages (when compared to rates for adults in the general population) of having less than a high school education in 2009 (Liao et al, 2011)[28].

In addition to general educational attainment, evidence indicates that Black, Hispanic, and American Indian and Alaska Native adults have lower health literacy than both White and Asian/Pacific Islander adults (Kutner et al, 2006)[29].

Employment

Those who are already at an adverse economic position will likely suffer more than those in better economic positions prior to the start of an economic recession. Employment rates for minority populations prior to the Recession provide evidence of adverse economic circumstances. In 2007, the employment rates for Black individuals were lowest when compared to White, Asian and Hispanic individuals with 58.4%, 63.6%, 64.3%, and 64.9% respectively (US Department of Labor and the US Bureau of Labor Statistics, p. 1, 2008)[30]. American Indian and Alaska Native individuals had the "lowest labor force participation rates" (59.2%) of any race and ethnicity group in 2011 (US Department of Labor and the US Bureau of Labor Statistics , p. 1, 2012). Black

individuals had the second lowest "labor force participation rates" (61.4%) in 2011 (US Department of Labor and the US Bureau of Labor Statistics , p. 1, 2012). Rates for Hispanic (66.5%), Asian (64.6%) and White (64.5%) individuals were similar in 2011 (US Department of Labor and the US Bureau of Labor Statistics , p. 1, 2012).

Income

Income is another social determinant of health. In 2009, total median earnings for workers 25 years and over by race and Hispanic origin indicate that populations categorized as Asian alone had the highest earnings ($38,963) followed by White alone ($34,949), Black alone ($28,101), and Hispanic of any race ($23,689) (Ryan & Siebens, p. 13, 2012).

Median earnings in 2009 for workers 25 years and over within educational attainment categories provided additional evidence of racial and ethnic disparities. Black and Hispanic individuals had the lowest median earnings among those without a high school diploma or equivalent (lowest for populations categorized as Blacks alone followed by Hispanics of any race, Asian alone and Whites alone) and with a "bachelor's degree or advanced degree" (lowest for individuals categorized as Hispanics of any race followed by Blacks alone, Whites alone and Asians alone) (Ryan & Siebens, p. 13, 2012). Following the Recession (2010), when compared to other racial and ethnic groups, White populations had lower poverty rates in general (DeNavas-Walt et al., 2011)[31]. The CDCs Racial and Ethnic Approaches to Community Health (REACH) survey provides evidence that Black and Hispanic communities (based on adults aged at or over 18) had

lower median income levels lower than that of comparison communities (Liao et al, 2011) in 2009.

2.2 DISPARITIES IN HEALTH

Targeting the reduction or elimination of disparities in individual health status, access to health care and utilization of health care services has been, in some form, a goal of the World Health Organization (WHO), Healthy People 2020 (HP2020) and other national and global organizations (WHO, 2013)[32]; (HP2020 (b), 2013)[33]. Research that improves the understanding of these issues and informs ways to address these disparities may help millions across the globe. We seek to examine these issues at the national level.

Health Status

Examining self-reported health status adults aged 25-74 for the years 1988-2007, Braveman and colleagues found that Black, Hispanic, Native Hawaiian/Pacific Islander and Asian populations have higher rates of less than excellent or very good health status when compared to Whites populations at any level of educational attainment (Braveman et al., Table 2, 2010). Research that controls for socioeconomic status is appropriate for studying differences for some race and ethnicity groups across a variety of health-related indicators (Braveman et al., 2010); (Braveman et al., 2005). Various measures of health (i.e. self-reported health including quality of life, depression, and having depressive symptoms) differ across racial/ethnic groups (i.e. Native American and Alaskan Native populations). (Miranda, 2003)[34]; (CDC, 2011)[35]; (Taylor, 2005)[36]. Differences in health have been shown across multiple racial and ethnic groups including Native American and Alaskan Native, Black, Latinos and other populations (Barnes, 2010)[37]; (NCHS, 2007)[38].

Access (Insurance)

Access to health care is a social determinant of health (HP2020, 2013). Health insurance allows consumers of health care services to share the cost of care with insurers and as such limits the total out-of-pocket cost to the consumer. In this way health insurance may enable consumers of health care services to access care more easily than those faced with the option to pay the total cost of care (HP 2020 (c), 2013)[39]; (CDC, 1998)[40]. A large study (n=12,068, mean age of respondent 55) conducted in 1987, found that adult patients admitted to the hospital characterized as being both poor (annual incomes less than $10,000) and without insurance were likely to report delays in seeking care ("the odds" "were more than 12 times greater") than all others in the study (Weissman, et al, p. 328, 1991)[41]. The same study found that delays in seeking care were also associated with longer hospitals stays when compared to those without such delays among adults (Weissman, et al, 1991). Additional evidence (BRFSS data 1994 and 1995) from a nationally representative sample of non-institutionalized adults suggests that those lacking health care coverage were more likely (when compared to those with health care coverage) to report having poor self-reported health (CDC, 1998).

Disparities in rates of being uninsured were consistent across the Recession for Minority adult populations. In 2004, American Indian (35%) and Hispanic (35%) adults under age 65 had higher rates of lacking health insurance than non-Hispanic Black (18%), Asian (16%) and non-Hispanic White (12%) non-elderly adults (Mead, et al., p. 55, 2008)[42]. In 2008 and 2009, the rate of uninsured by race was 14.5% and 15.8% for White individuals respectively, which was lower than the rates for Hispanic individuals (any race) with 30.7% and 32.4%, Asian individuals with 17.6% and 17.2%, Black

individuals with 19.1% and 21.0% respectively, according to The Current Population Survey (DeNavas-Walt et al., 2010)[43]. In 2010, the rates were also lowest for White individuals followed by Asian and Black individuals and individuals of Hispanic origin (US Census Bureau, 2011)[44]. In 2011, the uninsured adult population was principally White (45%), followed by Hispanic (32%) and Black (15%) (Urban Institute and Kaiser Commission on Medicaid and the Uninsured (b), 2012)[45]. However, the uninsured rate was highest for Hispanic individuals of any race (30.7%), followed by Black (20.8%), Asian (18.1%) and White (15.4%) individuals in 2011 (US Census Bureau, 2011)[46].

Utilization

Differences in use of health care services is another factor related to health outcomes. Differences in ambulatory care visits within the past year among working-age adults were present across racial and ethnic groups (Probst et al., 2004)[47]. White working-age adults had more ambulatory care visits in 1999-2000 when compared to Black, Hispanic, and American Indian and Alaska Natives working-age adults on average in both rural and urban areas of the US (Probst et al, 2004).

Doty & Holmgren (2006) report several gaps in health insurance coverage and access to care for minority adults. This report is based on a nationally representative sample of non-elderly adults aged 19-64. In 2005, among persons aged 19 - 64 who were currently insured but had been uninsured at any point during the past year, experiencing any "cost-related access problems," were highest for White adults (62%) followed by Black (56%) and Hispanic (51%) adults (Doty & Holmgren, p. 4, 2006)[48]. Cost-related access problems were defined as experiencing any of the following: "did not fill a

prescription; did not see a specialist when needed; skipped recommended medical test, treatment or follow-up; had a medical problem but did not visit doctor or clinic" (Doty & Holmgren, p. 4, 2006).

Income adjusted differences in rates of reporting having a regular doctor and having "had a doctor's visit in the past two years" were higher for White adults (86% and 95%, respectively) when compared to Hispanic adults (69% and 83%, respectively) when comparing those without any gaps in health insurance coverage during the past year for those aged 19 – 64 in 2005 (Doty & Holmgren, p. 11, 2006).

Among those uninsured (adults aged 19-64) at any time during the past year, Hispanic adults (68%) had significantly lower rates of receiving preventive care (i.e. "blood pressure checked in the past year") than White adults (80%) in 2005 (Doty & Holmgren, p. 11, 2006). In 2005, rates of having a regular doctor were also significantly lower for adult (aged 19 - 64) Hispanics compared to White adults with income adjusted rates at 37% and 62% respectively, among those that were uninsured at any time during the past year (Doty & Holmgren, p. 11, 2006).

2.3 OVERVIEW OF THE GREAT RECESSION

The United States (US) Bureau of Labor Statistics describes an economic recession as:

> *"A general slowdown in economic activity, a downturn in the business cycle, a reduction in the amount of goods and serviced produced and sold"* [49]*(US Bureau of Labor Statistics, p1, 2012a)*

The most recent recession, the Recession occurred between December of 2007 and June of 2009 (US Bureau of Labor Statistics (a), 2012).

Table 2.1. Annual average unemployment rate, civilian labor force 16 years and over (percent)

	2003	2004	2005	2006	2007	2008	2009	2010	2011
Unemployment Rate (Annual) (a)	6.0%	5.5%	5.1%	4.6%	4.6%	5.8%	9.3%	9.6%	8.9%
Number Unemployed (Number in Thousands)	8,774	8,149	7,591	7,001	7,078	8,924	14,265	14,825	13,747
……Pre-Recession……						Recession Timeline December 2007 – June 2009……		Post-Recession…….	

Source: (a)(BLS (b), 2012)[50]; (b)(BLS (d), 2012)[51]

Employment status by race for the civilian non-institutionalized population of the US was lower in 2009 than in 2008 (Office of Employment and Unemployment Statistics, Division of Labor Force Statistics, p. 1, 2010)[52]. Asian (3.1%) and White (2.6%) adults suffered smaller declines in employment population ratios than Black (4.1%) and Hispanics (3.6%) adults from 2008 to 2009 (Office of Employment and Unemployment Statistics, Division of Labor Force Statistics, p. 1, 2010)

Employment

Indicators of employment-related trends for mass layoffs and initial claimants for unemployment benefits during the Recession showed sharp spikes when compared to both before and after the Recession (US Bureau of Labor Statistics (a), p14, 2012). Seasonally-adjusted rates for initial claimants for unemployment insurance grew from 117,639 in March of 2008 to as high as 310,378 in 2009 (February) (US Bureau of Labor Statistics (e), 2012)[53]. In addition, the number of monthly Mass Layoff Events (firms

with a minimum of 50 initial claims for unemployment filed against them during a 5-week period) rose from 1,157 in April of 2008 to a high of 2,901 in 2009 (February) for private nonfarm firms (US Bureau of Labor Statistics (e), 2012).

In a report (2010) published by the Pew Research Center describing the effects of the Recession at 30 months in, researchers found evidence to suggest that the Recession had reduced the "wealth of the average American household by an estimated 20%" (Taylor et al., p. 1, 2010)[54]. The authors estimated that approximately 55% of adults in the US had some form of 'work-related hardship' (Taylor et al., p. 1, 2010), defined as being unemployed at some point in time, "a cut in pay, a reduction in hours or an involuntary move to part-time work" (Taylor et al., p. 1, 2010). Finally, 48% of Americans reported a worsening of their financial situation at the time of the survey (30 months into the recession) than prior to the Recession (Taylor et al., 2010).

Previous research using BRFSS data from 1987-2000 suggests an association exists between economic downturns and health behaviors (Ruhm, 2005)[55]. Changes in the employment rate have been associated with changes in smoking, excess weight gain, and physical activity; all of which have strong ties to health (Ruhm, 2005). Reductions in employment rates have been associated with a lower prevalence of smoking rates, improved physical activity levels (lower inactivity prevalence) and reductions in obesity prevalence (Ruhm, 2005).

Health Insurance and the Recession

Table 2.2. People without Health Insurance by Race and Ethnicity Group, 2003 – 2011

	2003 (a)	**2004** (b)	**2005** (b)	**2006** (c)	**2007** (c)	**2008** (d)	**2009** (d)	**2010** (e)	**2011** (f)
Race & Ethnicity Group									
White	14.6 %	14.7 %	15.0 %	14.9 %	14.3 %	14.5%	15.8%	15.4 %	14.9%
Black	19.6 %	19.3 %	19.6 %	20.5 %	19.5 %	19.1%	21.0%	20.8 %	19.5%
Asian	18.8 %	16.5 %	17.9 %	15.5 %	16.8 %	17.6%	17.2%	18.1 %	16.8%
Hispanic of any race	32.7 %	32.3 %	32.7 %	34.1 %	32.1 %	30.7%	32.4%	30.7 %	30.1%
……Pre-Recession……						Recession Timeline December 2007 – June 2009……		Post-Recession…….	

Sources: (a)(DeNavas-Walt, p. 15, 2003) [56]; (b)(DeNavas-Walt, p. 22, 2006)[57]; (c)(DeNavas-Walt, p. 22, 2008)[58]; (d)(DeNavas-Walt, p. 23, 2010)[59]; (e)(DeNavas-Walt, p. 26, 2011)[60]; (f)(DeNavas-Walt, p. 22, 2012)[61]

Currently, employer-sponsored health insurance serves as the largest source of health insurance for adults (under 65) in the US (Fronstin, 2012)[62]. Collins et al (2011) found that the loss of employment may include the loss of health insurance for millions of Americans. The loss of employer-sponsored health insurance related to a lost job (within the past two years, reported in 2010) by a family member reached 47% among adults in families with a job loss (Collins, 2011)[63]. In 2010, loss of employment included

the loss of employer-sponsored health insurance for 57% of individuals losing jobs (among those with health coverage through their job that was lost), or about nine million individuals (Collins, p. X, 2011). Among those earning less than 200% of the federal poverty level, 70% reported a loss of employer-sponsored health insurance tied to the loss of their employment (Collins, p. X, Exhibit ES-1, 2011). This loss of employer-sponsored health insurance coverage may force individuals to shop for insurance on the individual market. Difficulty in finding the coverage needed on the individual insurance market was reported for 11 million individuals, especially for those with a health problem (53%), or at less than 200% of the federal poverty level (49%), in comparison to those with no health problems (31%) (Collins, p. XI, Exhibit ES-2, 2011). Employment may serve as an important factor related to having insurance and health.

Health Insurance Cost

Across the 2003-2010 period factors associated with health insurance costs included employer size. Employees in larger firms (50 or more employees) were more likely to have lower deductibles (single-person plans in large firms: $452-$917 & single-person plans in small firms: $703-$1,447; family plans in large firms: $969-$1,827 & family plans in small firms: $1,575-$2,857) when compared to small firms (Schoen, p. 6, Exhibit 4, 2011). Overall trends in employer-sponsored health insurance show signs of declines in the proportion of individuals having this coverage (Ginsburg, 2008) [64];(Gould & Hertel-Fernandez, 2010)[65]; (Holahan, 2011)[66].

Results from the 2012 Retirement Confidence Survey provide evidence that worker confidence (*very confident*) for having enough money to pay for medical

expenses and long-term care in retirement is lower than that of 1993-2008 (pre-Recession) with rates in 2012 (post-Recession) at 13% and 9% respectively (Helman, p. 9, Figure 4 & Figure 5, 2012)[67]; (Helman, 2008)[68]. This may indicate lasting worries from the Recession. Trends for being *somewhat confident* and being *very confident* in having enough money to cover these expenses were similar to being *very confident*.

In 2002, higher health insurance deductibles and reduced benefits when compared to the previous year, affected as many as 33% of adults with employer-sponsored health insurance (Edwards, p. 1, 2002)[69]. The authors suggest that lacking health insurance was attributable to loss of employment for approximately 52% of adults (aged 19-64) who lost health insurance coverage in 2001 (Edwards, 2002). Another study (2006) found evidence to suggest that the rise of premiums is outpacing the rise in incomes (Claxton et al., 2007)[70].

Even those with insurance coverage may be burdened with the cost of coverage itself. A national study using data from the Medical Expenditure Panel Survey (MEPS) found that the overall cost of family coverage rose 50% across the period 2003 - 2010, while employee shares (premiums) rose 63% (Schoen, p. 1, 2011)[71]. This trend was projected to rise to as much as 72 - 79% by the year 2020 (Schoen, 2010)[72]. This same study provided evidence of an increase in the number of states with annual health insurance premiums at 20% or more of the median household income, from only one state in 2003 to 23 states in 2010 (Schoen, p. 4, 2011).

The cost associated with insurance coverage may change the way persons use medical advice or health seeking behavior. In 2009, among those with insurance, 53% of

respondents reported having higher health shares (i.e. deductibles / premiums) than the previous year (Fronstin, p11, 2009)[73]. In 2009, among those experiencing increased cost-shares for health insurance plans (during the previous year), 25% and 46% of individuals reported not filling or skipping doses of prescribed medication and delayed going to a doctor, respectively (Fronstin, p11, 2009). Colonoscopy screening rates dropped among insured adults 50-64 years of age during the Recession when compared to prior to the Recession (Dorn et al., 2011) [74].

In a small study in Philadelphia, individuals undergoing home foreclosure were at higher risk than others in the same community for lacking health insurance and prescription non-adherence due to cost (Pollack & Lynch, 2009)[75].

The number adults (aged 19-64) who reported cost-related access problems for healthcare has grown from 2005 to 2010, with an increase from 64 million to 75 million individuals (Collins, p. XII, Exhibit ES-3, 2011). Similar findings have been found with regard to those reporting having any bill problem or medical debt, with a rise from 58 to 73 million individuals during the same period (Collins, p. XII, Exhibit ES-3, 2011). The rise in medical debt for those under 65 has also risen (Doty et al., 2005)[76], especially in the Recession (Sommers & Cunningham, 2011)[77]. Those with medical debt are also more likely to forgo needed care than those without such debt (Doty et al., 2005).

Health

Financial stressors may be associated with poor quality of life and the number of days one is in poor mental health. The effects of the Great Recession have been generalized to many health-related issues for various populations. For example, stress and

similar issues may be related to economic concerns or the loss of employment. This is an important consideration in assessing one's health. Those over 50 years of age who are delinquent in their mortgage are more likely to report depressive symptoms than those not delinquent on their mortgages (Alley, p. 2,296, 2011) [78]. Unemployment has been associated with poor life evaluation, being worried and being sad during the Recession (Deaton, p. 16 & 39-40, 2012)[79].

Vulnerabilities of Minority Populations to Economic Downturns

There was an uneven effect of the Recession on people of nonwhite race/ethnicity. The proportion of workers currently employed at least part-time who reported being forced to work fewer hours was higher among Black (42%) and Hispanic (40%) followed by White (22%) workers (Taylor et al., p 11, 2010). Education also influenced work hours, with 39% of those with a high school diploma or less reporting being forced to work fewer hours, versus those with some college at 29% and college graduates at 14% (Taylor et al., p 11, 2010). Black and Hispanic workers are more likely to be adversely affected by the Recession as measured through higher unemployment rates in May of 2007 when compared to White individuals by sex (Hoynes et al., p. 33, 2012). Hispanic and Black individuals had larger changes in unemployment rates from May 2007 to October 2009 when compared to White individuals by sex (except for Hispanic men, who had lower changes in unemployment rates when compared to White men) (Hoynes et al., p. 34, 2012).

Hispanic workers were more likely to lose employment-based health insurance coverage than both Black and White individuals [80](Fronstin, 2012). In addition, a small

study in Philadelphia showed the effects of the Recession (i.e. foreclosures) were higher for African American adults (aged 18 and over) than White adults (Pollack et al., 2011)[81].

Rural Location

Other factors related to access to care include living in rural areas including lower availability of medical providers (Council on Graduate Medical Education , 1998)[82]; (Knapp, 1999)[83]; (MacDowell, 2010)[84]. Ensuring the availability of health care providers, especially primary care physicians, has been suggested as a key part in the goal of reducing disparities in health care (Siegel, 2004)[85]. Rural areas also have disproportionate levels of disability, disease, factors associated with poorer outcomes and lower availability and access to health care services; when compared to more metropolitan areas (Gamm, 2003)[86]; (Norton, p. 728, 1989)[87]; (Jones, 2009)[88].

Income Inequality

Multi-level modeling techniques, among others, have been used to identify the relationship between aggregate levels of income inequality (i.e. county-level or state-level) and individual health indicators. Income inequality measured at the state-level has been shown to be associated with an individual's health using the Current Population Survey (pooled data from 1995 and 1997) and Gini Coeficients from the 1989-1990 US Census (Subramanian & Kawachi, 2004). Income inequality measured at the county-level has been shown to have a negative independent effect on individual's perceived health status in a study of a nationally representative sample of non-institutionalized White adult (aged 25-64) males in 1989-1991 (Soobader & LeClere, 1999)[89]. The authors used Gini coeficients to serve as the measure of county-level income inequality

(Soobader & LeClere, 1999). Income inequality using the Robin Hood index was positively associated with Body Mass Index (BMI), and hypertension for those with incomes below $25,000 (Diez-Roux et al. 2000).

State-Level Medicaid Policies

States can use Section 1115 waivers to expand Medicaid to individuals not previously eligible for coverage, including childless adults (Natoli et al., 2011);(Borck et al., 60, 2012)[90]. States vary in the program eligibility implemented under 1115 waivers. This variation may include income eligibility criteria based on percent of Federal Poverty Levels (FPLs) and the benefits provided (i.e. equivalent to Medicaid or more limited coverage) (Natoli et al, 2011). For example, the District of Columbia used 1115 waivers to expand coverage (equivalent to Medicaid) to adults aged 50-64 below 50% of the FPL, while Utah expanded coverage (for "primary and preventive care only") to adults over 19 with incomes below 150% of the FPL (Natoli et al., p. 2, 2011).

The insurance status of parents can play a role in the insurance status of children. Among children who were eligible for Medicaid through poverty-related expansions in 1999, the Medicaid participation rates for children in nine states that extended family coverage provided through Medicaid were higher than those in states with no family coverage expansions for the same year (eligibility defined as of July of each year) (Dubay & Kenney, Table 1, p. 1293, 2003)[91]. Among low-income families participating in the *Kaiser Low-Income Coverage and Access Survey* (2005), those parents insured with either Private coverage or Medicaid coverage were more likely (than parents that were uninsured) to have children that were insured (Schwartz, p. 3, 2007)[92].

Variations in a state's Medicaid and State Children's Health Insurance Program (SCHIP) was associated with access to health care for children with special health care needs. When compared to state's with Medicaid/SCHIP upper eligibility limits from 2005 at/above 300% FPL, state's with lower eligibility limits (<200%) were more likely in the odds to report having no personal doctor or nurse (OR=1.31, 1.03-1.67) among children with special health care needs aged 0-17 years (data 2005-2006 National Survey of Children with Special Heath Care Needs) (Singh et al., p. S357 Table 2, 2009)[93].

State Medicaid policies may play an important role in individual health status for vulnerable populations that may be eligible to receive such services both currently and under Medicaid expansion related to the Affordable Care Act (2010). Medicaid varies in the benefits provided by states within the US (Ferguson et al., 2009)[94] Variation in coverage and eligibility may produce different outcomes for individuals within states.

Medicaid expansion has been shown to be associated with decreases in mortality rates for individuals in states that expanded eligibility to include those not previously eligible (Sommers, 2012). Medicaid expansion may be associated with decreases in mortality among minority adults and those in poor counties (Sommers et al., 2012). In 2008, approximately 6 million adults were currently enrolled in Medicaid through Section 1115 Expansion Enrollment, representing 37% of all Medicaid-covered adults (Borck et al., 2012); (The Medicaid Analytic Extract 2008 Chartbook Appendix Tables For Chapter 7, p. 107, 2012)[95] Childless adults in states expanding Medicaid through Section 1115 waivers were 38 to 46 years of age on average in 2007 (Natoli et al, 2011).

2.4 STUDY PURPOSE

Multiple factors interact to determine current health status. Factors that are contextual including, social, behavioral (Walsemann & Bell, 2010)[96] help shape the way we interact with our environment and may be similar within location [97](Meersman et al., 2009) and racial and ethnic sub-groups (Walsemann et al., 2011)[98]. These contextual factors may have a differential effect on the racial/ethnic differences present in the access, and receipt of health care by individuals (Cooper et al., Figure 1, 2002)[99]. The BRFSS includes information that may be used to cluster samples at some higher levels. We will use fixed effects at the individual and county-levels while allowing coefficients to vary for our state policy and state income inequality variables. Little has been documented on the utility of contextual factors (i.e. factors present in the context of an individual's community, "usually at the group level" (Diez Roux, p. 589, 2002)[100] in measuring differences in individual race and health status during the Recession.

Some studies have looked into the trends over the past few years. However, little has been reported concerning subgroups of the population. The proposed study seeks to identify trends for specific racial and ethnic groups, and differences across rurality and state income inequality within these groups. The objective of the proposed study is to use self-reported individual measures of access to health services and outcomes of care for racial groups to measure change and the rate of change for general health status, poor mental and physical health days, and cost-related forgone medical care from 2004-2010.

The primary focus will be on changes leading up to, within and after the Recession. Because the Recession began in December, 2007 we will include data from

2008 – 2009 as during the Recession (BLS (a), 2012). The primary measures of state-level influences on these outcomes will include state Medicaid coverage (differences in eligibility defined as the Percent of Federal Poverty for parents and childless adults) policies. Income inequality will be assessed at the state-level. Minority populations will be examined to ascertain whether there were differential effects of the Recession on different population groups.

Testable Hypothesis

Aim 1: To measure whether the Recession and subsequent recovery (as compared to the pre-Recession time period) have differential effects on general health status, poor mental and physical health days, and cost-related forgone medical care among vulnerable populations of working-age adults, defined as non-white racial/ethnic subgroups.

Hypothesis 1A: Among working age adults, poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost will be higher during the years 2008 – 2009 than during the years 2004 – 2007. The main effects include Time Period (2004-2007 for the Pre-Recession, 2008-2009 for the Recession and 2010 for the Recovery/Post-Recession, with the referent group identified as the pre-Recession years (2004-2007).

Model 1A: Fully Adjusted Model: Random Intercept Only with Level 1 Predictors & Level 2 Predictors

Level-1 (Fixed Effects) Race, Sex, Income-level, Education-level, Disability, Diabetes, Insurance, Age, Employment, Time-Period, Rurality

Level-2 Poverty Rates, Unemployment Rates, with Random Level-2 State Intercept.

Hypothesis 1A Main Effects of interest: Time-Period

Equation 1:

$$Y_{ij}=\beta_0+\beta_{1(1)}X_{1(OTHER)ij}+\beta_{1(2)}X_{1(AIAN)ij}+\beta_{1(3)}X_{1(ASIAN)ij}+\beta_{1(4)}X_{1(BLACK)ij}+\beta_{2(1)}X_{2(MALE)ij}$$
$$+\beta_{3(1)}X_{3(DK/NS/M)ij}+\beta_{3(2)}X_{3(<15k)ij}+\beta_{3(3)}X_{3(15k25k)ij}+\beta_{3(4)}X_{3(25k35k)ij}+\beta_{3(5)}X_{3(35k50k)ij}+\beta_{4(1)}X_{4(SOME.HS)ij}+\beta_{4(2)}X_{4(HS.GRAD)ij}+\beta_{4(3)}X_{4(SOME.COLLEGE)ij}+\beta_{5(1)}X_{5(DISABLED)ij}+\beta_{6(1)}X_{6(DIABETES)ij}+$$
$$\beta_{7(1)}X_{7(NO\ INSURANCE)ij}+\beta_8X_{8ij}+\beta_{9(1)}X_{9(UNEMPLOYED)ij}+\beta_{9(2)}X_{9(NEITHER\ EMPLOYED/UNEMPLOYED)ij}+\beta_{10(1)}X_{10(RECESSION)ij}+\beta_{10(2)}X_{10(RECOVERY)ij}+\beta_{11(1)}X_{11(RURAL)ij}+$$
$$\beta_{12}X_{12i}+\beta_{13}X_{13i}+e_{ij}$$

Where (Note: all definitions are adjusted for all other terms in the model),

Y_{ij} is the outcome for the *i*th individual in the *j*th state

β_0 is the intercept, which is the overall average for our outcome

$\beta_{1(1)}X_{1(Other)ij}+\beta_{1(2)}X_{1(AIAN)ij}+\beta_{1(3)}X_{1(Asian)ij}+\beta_{1(4)}X_{1(Black)ij}$ is the linear combination of the indicators for race categories and the associated coefficients

$\beta_{2(1)}X_{2(Male)ij}$ is the linear combination of the indicators for sex categories and the associated coefficients

$\beta_{3(1)}X_{3(DK/NS/M)ij}+\beta_{3(2)}X_{3(<15k)ij}+\beta_{3(3)}X_{3(15k25k)ij}+\beta_{3(4)}X_{3(25k35k)ij}+\beta_{3(5)}X_{3(35k50k)ij}$ is the linear combination of the indicators for income categories and the associated coefficients

$\beta_{4(1)}X_{4(SOME.HS)ij}+\beta_{4(2)}X_{4(HS.GRAD)ij}+\beta_{4(3)}X_{4(SOME.COLLEGE)ij}$ is the linear combination of the indicators for education categories and the associated coefficients

$\beta_{5(1)}X_{5(DISABLED)ij}$ is the linear combination of the indicators for disability categories and the associated coefficients

$\beta_{6(1)}X_{6(DIABETES)ij}$ is the linear combination of the indicators for diabetes categories and the associated coefficients

$\beta_{7(1)}X_{7(NO\ INSURANCE)ij}$ is the linear combination of the indicators for insurance categories and the associated coefficients

β_8X_{8ij} is the linear combination of the indicators for age and the associated coefficients

$\beta_{9(1)}X_{9(UNEMPLOYED)ij} + \beta_{9(2)}X_{9(NEITHER\ EMPLOYED/UNEMPLOYED)ij}$ is the linear combination of the indicators for employment categories and the associated coefficients

$\beta_{10(1)}X_{10(RECESSION)ij} + \beta_{10(2)}X_{10(RECOVERY)ij}$ is the linear combination of the indicators for time categories and the associated coefficients

$\beta_{11(1)}X_{11(RURAL)ij}$ is the linear combination of the indicators for rural categories and the associated coefficients

$\beta_{12}X_{12i}$ is the linear combination of the indicators for continuous state-level unemployment rate and the associated coefficients, which is constant over each state, but varies across states

$\beta_{13}X_{13i}$ is the linear combination of the indicators for continuous state-level poverty rate and the associated coefficients, which is constant over each state, but varies across states

e_{ij} is the error term for the *i*th individual in the *j*th state

Equation 1: $Y_{ij} = \beta_0 + \beta_{1(1)}(OTHER)_{ij} + \beta_{1(2)}(AIAN)_{ij} + \beta_{1(3)}(ASIAN)_{ij} + \beta_{1(4)}(BLACK)_{ij} + \beta_{2(1)}(MALE)_{ij} + \beta_{3(1)}(Don't\ Know/Not\ Sure/Missing)_{ij} + \beta_{3(2)}(<15k)_{ij} + \beta_{3(3)}(15k\text{-}25k)_{ij}$

$+\beta_{3(4)}(25k\text{-}35k)_{ij} +\beta_{3(5)}(35k\text{-}50k)_{ij} +\beta_{4(1)}(\text{SOME HS})_{ij}+\beta_{4(2)}(\text{HS GRAD})_{ij} +\beta_{4(3)}(\text{SOME COLLEGE})_{ij} +\beta_{5(1)}(\text{DISABLED})_{ij}+\beta_{6(1)}(\text{DIABETES})_{ij}+ \beta_{7(1)}(\text{NO INSURANCE})_{ij} + \beta_{8}(\text{AGE})_{ij}+ \beta_{9(1)}(\text{UNEMPLOYED})_{ij} + \beta_{9(2)}(\text{NEITHER EMPLOYED/UNEMPLOYED})_{ij} + \beta_{10(1)}(\text{RECESSION})_{ij} + \beta_{10(2)}(\text{RECOVERY})_{ij} + \beta_{11(1)}(\text{RURAL})_{ij} + \beta_{12}(\text{STATE UNEMPLOYMENT RATE})_{i} + \beta_{13}(\text{STATE POVERTY RATE})_{i} +e_{ij}$

Interpretation: If any Wald test of β_{10} is significant ($p \leq .05$), then we will conclude there is evidence to suggest there is a difference in our **outcomes** across these **Time-Periods**, adjusted for all other terms in the model. Our reference groups are specified in our model, which allows us to compare both Recession & Recovery to the reference group (Pre-Recession).

In addition, we specify odds rations within our model statement. If the confidence interval for odds ratios do not include 1.0 (null), we conclude there is a difference in the odds ratios for our outcomes for each categorical variable. For example, if the lower and upper bounds of Time-Period (ref=Pre-Recession) do not include 1.0, and the odds ratio is greater than 1.0 for the Recession category of Time-Period (given we are modeling poor/fair health versus good/very good/excellent health), then we conclude there is a greater likelihood in the odds of reporting poor/fair health in the Recession when compared to the Pre-Recession Time-Period, adjusted for all other terms in the model. **Note: An explanation for each odds ratio is not given for all equations, however odds ratios are to be used throughout and interpreted in a similar way. Odds ratios will be calculated for each categorical variable and the interaction of categorical variables.**

Hypothesis 1B: Among working age adults, adverse changes across the period studied in self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost will be higher among African American, Hispanic, American Indian/Alaska Native and Asian adults than among White adults (referent group).

Hypothesis 1C: Among working age adults, post-Recession improvement in poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost will be will be lower among African American, Hispanic, American Indian/Alaska Native and Asian adults than among White adults.

Hypothesis 1B & 1C: Fully Adjusted Model: Random Intercept Only with 9 level 1 Predictors & 5 level 2 Predictors & Interaction Term

Level-1 (Fixed Effects) Race, Sex, Income-level, Education-level, Disability, Diabetes, Insurance, Age, Employment, Time-Period, Rurality

Level-2 Poverty Rates, Unemployment Rates, with Random Level-2 State Intercept.

Hypothesis 1B & 1C Interaction of interest: Time-Period*Race

Equation 2:

$$Y_{ij}=\beta_0+\beta_{1(1)}X_{1(OTHER)ij}+\beta_{1(2)}X_{1(AIAN)ij}+\beta_{1(3)}X_{1(ASIAN)ij}+\beta_{1(4)}X_{1(BLACK)ij}+\beta_{2(1)}X_{2(MALE)ij}$$
$$+\beta_{3(1)}X_{3(DK/NS/M)ij}+\beta_{3(2)}X_{3(<15k)ij}+\beta_{3(3)}X_{3(15k25k)ij}+\beta_{3(4)}X_{3(25k35k)ij}+\beta_{3(5)}X_{3(35k50k)ij}+\beta_{4(1)}X_{4(SOME.HS)ij}+\beta_{4(2)}X_{4(HS.GRAD)ij}+\beta_{4(3)}X_{4(SOME.COLLEGE)ij}+\beta_{5(1)}X_{5(DISABLED)ij}+\beta_{6(1)}X_{6(DIABETES)ij}+$$
$$\beta_{7(1)}X_{7(NO\ INSURANCE)ij}+\beta_8X_{8ij}+\beta_{9(1)}X_{9(UNEMPLOYED)ij}+\beta_{9(2)}X_{9(NEITHER\ EMPLOYED/UNEMPLOYED)ij}+\beta_{10(1)}X_{10(RECESSION)ij}+\beta_{10(2)}X_{10(RECOVERY)ij}+\beta_{11(1)}X_{11(RURAL)ij}+$$

$\beta_{12(1)}X_{10(RECESSION)ij}X_{1(OTHER)ij} + \beta_{12(2)}X_{10(RECOVERY)ij}X_{1(OTHER)ij} +$

$\beta_{12(3)}X_{10(RECESSION)ij}X_{1(AIAN)ij} + \beta_{12(4)}X_{10(RECOVERY)ij}X_{1(AIAN)ij} +$

$\beta_{12(5)}X_{10(RECESSION)ij}X_{1(ASIAN)ij} + \beta_{12(6)}X_{10(RECOVERY)ij}X_{1(ASIAN)ij}+$

$\beta_{12(7)}X_{10(RECESSION)ij}X_{1(BLACK)ij} + \beta_{12(8)}X_{10(RECOVERY)ij}X_{1(BLACK)ij} + \beta_{13}X_{13i} + \beta_{14}X_{14i} + e_{ij}$

Where (Note: all definitions are adjusted for all other terms in the model),

Y_{ij} is the outcome for the *i*ith individual in the *j*th state

β_0 is the intercept, which is the overall average for our outcome

$\beta_{1(1)}X_{1(Other)ij}+\beta_{1(2)}X_{1(AIAN)ij}+\beta_{1(3)}X_{1(Asian)ij}+\beta_{1(4)}X_{1(Black)ij}$ is the linear combination of the indicators for race categories and the associated coefficients

$\beta_{2(1)}X_{2(Male)ij}$ is the linear combination of the indicators for sex categories and the associated coefficients

$\beta_{3(1)}X_{3(DK/NS/M)ij}+\beta_{3(2)}X_{3(<15k)ij}+\beta_{3(3)}X_{3(15k25k)ij}+\beta_{3(4)}X_{3(25k35k)ij}+\beta_{3(5)}X_{3(35k50k)ij}$ is the linear combination of the indicators for income categories and the associated coefficients

$\beta_{4(1)}X_{4(SOME.HS)ij}+\beta_{4(2)}X_{4(HS.GRAD)ij} +\beta_{4(3)}X_{4(SOME.COLLEGE)ij}$ is the linear combination of the indicators for education categories and the associated coefficients

$\beta_{5(1)}X_{5(DISABLED)ij}$ is the linear combination of the indicators for disability categories and the associated coefficients

$\beta_{6(1)}X_{6(DIABETES)ij}$ is the linear combination of the indicators for diabetes categories and the associated coefficients

$\beta_{7(1)}X_{7(NO\ INSURANCE)ij}$ is the linear combination of the indicators for insurance categories and the associated coefficients

$\beta_8 X_{8ij}$ is the linear combination of the indicators for age and the associated coefficients

$\beta_{9(1)}X_{9(\text{UNEMPLOYED})ij} + \beta_{9(2)}X_{9(\text{NEITHER EMPLOYED/UNEMPLOYED})ij}$ is the linear combination of the indicators for employment categories and the associated coefficients

$\beta_{10(1)}X_{10(\text{RECESSION})ij} + \beta_{10(2)}X_{10(\text{RECOVERY})ij}$ is the linear combination of the indicators for time categories and the associated coefficients

$\beta_{11(1)}X_{11(\text{RURAL})ij}$ is the linear combination of the indicators for rural categories and the associated coefficients

$\beta_{12(1)}X_{10(\text{RECESSION})ij}X_{1(\text{OTHER})ij} + \beta_{12(2)}X_{10(\text{RECOVERY})ij}X_{1(\text{OTHER})ij} +$

$\beta_{12(3)}X_{10(\text{RECESSION})ij}X_{1(\text{AIAN})ij} + \beta_{12(4)}X_{10(\text{RECOVERY})ij}X_{1(\text{AIAN})ij} +$

$\beta_{12(5)}X_{10(\text{RECESSION})ij}X_{1(\text{ASIAN})ij} + \beta_{12(6)}X_{10(\text{RECOVERY})ij}X_{1(\text{ASIAN})ij} +$

$\beta_{12(7)}X_{10(\text{RECESSION})ij}X_{1(\text{BLACK})ij} + \beta_{12(8)}X_{10(\text{RECOVERY})ij}X_{1(\text{BLACK})ij}$ is the linear combination of the indicators for time categories by race categories and the associated coefficients

$\beta_{13}X_{13i}$ is the linear combination of the indicators for continuous state-level unemployment rate and the associated coefficients, which is constant over each state, but varies across states

$\beta_{14}X_{14i}$ is the linear combination of the indicators for continuous state-level poverty rate and the associated coefficients, which is constant over each state, but varies across states

e_{ij} is the error term for the *i*th individual in the *j*th state

Equation 2: $Y_{ij} = \beta_0 + \beta_{1(1)}(\text{OTHER})_{ij} + \beta_{1(2)}(\text{AIAN})_{ij} + \beta_{1(3)}(\text{ASIAN})_{ij} + \beta_{1(4)}(\text{BLACK})_{ij}$ $+\beta_{2(1)}(\text{MALE})_{ij} + \beta_{3(1)}(\text{Don't Know/Not Sure/Missing})_{ij} + \beta_{3(2)}(\text{<15k})_{ij} + \beta_{3(3)}(\text{15k-25k})_{ij}$ $+\beta_{3(4)}(\text{25k-35k})_{ij} + \beta_{3(5)}(\text{35k-50k})_{ij} + \beta_{4(1)}(\text{SOME HS})_{ij} + \beta_{4(2)}(\text{HS GRAD})_{ij} + \beta_{4(3)}(\text{SOME}$ $\text{COLLEGE})_{ij} + \beta_{5(1)}(\text{DISABLED})_{ij} + \beta_{6(1)}(\text{DIABETES})_{ij} + \beta_{7(1)}(\text{NO INSURANCE})_{ij} +$

$\beta_8(AGE)_{ij}$+ $\beta_{9(1)}(UNEMPLOYED)_{ij}$ + $\beta_{9(2)}(NEITHER\ EMPLOYED/UNEMPLOYED)_{ij}$ + $\beta_{10(1)}(RECESSION)_{ij}$ + $\beta_{10(2)}(RECOVERY)_{ij}$ + $\beta_{11(1)}(RURAL)_{ij}$ + $\beta_{12(1)}(RECESSION)_{ij}(OTHER)_{ij}$ + $\beta_{12(2)}(RECOVERY)_{ij}(OTHER)_{ij}$ + $\beta_{12(3)}(RECESSION)_{ij}(AIAN)_{ij}$ + $\beta_{12(4)}(RECOVERY)_{ij}(AIAN)_{ij}$ + $\beta_{12(5)}(RECESSION)_{ij}(ASIAN)_{ij}$ + $\beta_{12(6)}(RECOVERY)_{ij}(ASIAN)_{ij}$ + $\beta_{12(7)}(RECESSION)_{ij}(BLACK)_{ij}$ + $\beta_{12(8)}(RECOVERY)_{ij}(BLACK)_{ij}$ + β_{13}(STATE UNEMPLOYMENT RATE)$_i$ + β_{14}(STATE POVERTY RATE)$_i$ +e_{ij}

Interpretation: If any Wald test of the interaction term β_{12} is significant ($p \leq .05$), then we will conclude there is evidence that there is a differential effect for our **outcomes** of **Race** over **Time-Period**, adjusted for all other terms in the model. Odds ratios will provide information for specific comparisons.

Aim 2: To measure the extent to which state-level income inequality burdens vulnerable populations.

Hypothesis 2A: The effects of recession will be affected by GINI. (time by GINI) Among working age adults, holding race/ethnicity constant, poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost will be higher during the years 2008 – 2009 than during the years 2004 – 2007 and as state income inequality increases poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost will increase when compared to states with lower levels of income inequality.

Hypothesis 2A: **Fully Adjusted Model: Random Intercept Only with Level 1 Predictors & Level 2 Predictors & Interaction Term**

Level-1 (Fixed Effects) Race, Sex, Income-level, Education-level, Disability, Diabetes, Insurance, Age, Employment, Time-Period, Rurality & Level-2 Poverty Rates, Unemployment Rates & GINI, with Random Level-2 State Intercept.

Interaction: Time-Period*Race

Hypothesis 2AMain Effects of interest: GINI & Time-Period

Equation 3:

$$Y_{ij}=\beta_0+\beta_{1(1)}X_{1(OTHER)ij}+\beta_{1(2)}X_{1(AIAN)ij}+\beta_{1(3)}X_{1(ASIAN)ij}+\beta_{1(4)}X_{1(BLACK)ij}+\beta_{2(1)}X_{2(MALE)ij}$$
$$+\beta_{3(1)}X_{3(DK/NS/M)ij}+\beta_{3(2)}X_{3(<15k)ij}+\beta_{3(3)}X_{3(15k25k)ij}+\beta_{3(4)}X_{3(25k35k)ij}+\beta_{3(5)}X_{3(35k50k)ij}+\beta_{4(1)}X_{4(SOME.HS)ij}+\beta_{4(2)}X_{4(HS.GRAD)ij}+\beta_{4(3)}X_{4(SOME.COLLEGE)ij}+\beta_{5(1)}X_{5(DISABLED)ij}+\beta_{6(1)}X_{6(DIABETES)ij}+$$
$$\beta_{7(1)}X_{7(NO\ INSURANCE)ij}+\beta_{8}X_{8ij}+\beta_{9(1)}X_{9(UNEMPLOYED)ij}+\beta_{9(2)}X_{9(NEITHER\ EMPLOYED/UNEMPLOYED)ij}+\beta_{10(1)}X_{10(RECESSION)ij}+\beta_{10(2)}X_{10(RECOVERY)ij}+\beta_{11(1)}X_{11(RURAL)ij}+$$
$$\beta_{12(1)}X_{10(RECESSION)ij}X_{1(OTHER)ij}+\beta_{12(2)}X_{10(RECOVERY)ij}X_{1(OTHER)ij}+$$
$$\beta_{12(3)}X_{10(RECESSION)ij}X_{1(AIAN)ij}+\beta_{12(4)}X_{10(RECOVERY)ij}X_{1(AIAN)ij}+$$
$$\beta_{12(5)}X_{10(RECESSION)ij}X_{1(ASIAN)ij}+\beta_{12(6)}X_{10(RECOVERY)ij}X_{1(ASIAN)ij}+$$
$$\beta_{12(7)}X_{10(RECESSION)ij}X_{1(BLACK)ij}+\beta_{12(8)}X_{10(RECOVERY)ij}X_{1(BLACK)ij}+\beta_{13}X_{13i}+\beta_{14}X_{14i}+$$
$$\beta_{15(1)}X_{15(GINI\text{-}Q1)i}+\beta_{15(2)}X_{15(GINI\text{-}Q2)i}+\beta_{15(3)}X_{15(GINI\text{-}Q3)i}+e_{ij}$$

Where (Note: all definitions are adjusted for all other terms in the model),

Y_{ij} is the outcome for the *i*th individual in the *j*th state

β_0 is the intercept, which is the overall average for our outcome

$\beta_{1(1)}X_{1(Other)ij}+\beta_{1(2)}X_{1(AIAN)ij}+\beta_{1(3)}X_{1(Asian)ij}+\beta_{1(4)}X_{1(Black)ij}$ is the linear combination of the indicators for race categories and the associated coefficients

$\beta_{2(1)}X_{2(Male)ij}$ is the linear combination of the indicators for sex categories and the associated coefficients

$\beta_{3(1)}X_{3(DK/NS/M)ij}+\beta_{3(2)}X_{3(<15k)ij}+\beta_{3(3)}X_{3(15k25k)ij}+\beta_{3(4)}X_{3(25k35k)ij}+\beta_{3(5)}X_{3(35k50k)ij}$ is the linear combination of the indicators for income categories and the associated coefficients

$\beta_{4(1)}X_{4(SOME.HS)ij}+\beta_{4(2)}X_{4(HS.GRAD)ij}+\beta_{4(3)}X_{4(SOME.COLLEGE)ij}$ is the linear combination of the indicators for education categories and the associated coefficients

$\beta_{5(1)}X_{5(DISABLED)ij}$ is the linear combination of the indicators for disability categories and the associated coefficients

$\beta_{6(1)}X_{6(DIABETES)ij}$ is the linear combination of the indicators for diabetes categories and the associated coefficients

$\beta_{7(1)}X_{7(NO\ INSURANCE)ij}$ is the linear combination of the indicators for insurance categories and the associated coefficients

$\beta_{8}X_{8ij}$ is the linear combination of the indicators for age and the associated coefficients

$\beta_{9(1)}X_{9(UNEMPLOYED)ij} + \beta_{9(2)}X_{9(NEITHER\ EMPLOYED/UNEMPLOYED)ij}$ is the linear combination of the indicators for employment categories and the associated coefficients

$\beta_{10(1)}X_{10(RECESSION)ij} + \beta_{10(2)}X_{10(RECOVERY)ij}$ is the linear combination of the indicators for time categories and the associated coefficients

$\beta_{11(1)}X_{11(RURAL)ij}$ is the linear combination of the indicators for rural categories and the associated coefficients

$\beta_{12(1)}X_{10(RECESSION)ij}X_{1(OTHER)ij} + \beta_{12(2)}X_{10(RECOVERY)ij}X_{1(OTHER)ij} +$

$\beta_{12(3)}X_{10(RECESSION)ij}X_{1(AIAN)ij} + \beta_{12(4)}X_{10(RECOVERY)ij}X_{1(AIAN)ij} +$

$\beta_{12(5)}X_{10(RECESSION)ij}X_{1(ASIAN)ij} + \beta_{12(6)}X_{10(RECOVERY)ij}X_{1(ASIAN)ij}+$

$\beta_{12(7)}X_{10(RECESSION)ij}X_{1(BLACK)ij} + \beta_{12(8)}X_{10(RECOVERY)ij}X_{1(BLACK)ij}$ is the linear combination of the indicators for time categories by race categories and the associated coefficients

$\beta_{13}X_{13i}$ is the linear combination of the indicators for continuous state-level unemployment rate and the associated coefficients, which is constant over each state, but varies across states

$\beta_{14}X_{14i}$ is the linear combination of the indicators for continuous state-level poverty rate and the associated coefficients, which is constant over each state, but varies across states

$\beta_{15(1)}X_{15(GINI\text{-}Q1)i}+ \beta_{15(2)}X_{15(GINI\text{-}Q2)i} + \beta_{15(3)}X_{15(GINI\text{-}Q3)i}$ is the linear combination of the indicators for categorical state-level Gini ratio and the associated coefficients, which is constant over each state, but varies across states

e_{ij} is the error term for the *i*th individual in the *j*th state

Equation 3: $Y_{ij} = \beta_0 +\beta_{1(1)}(OTHER)_{ij}+\beta_{1(2)}(AIAN)_{ij} +\beta_{1(3)}(ASIAN)_{ij} +\beta_{1(4)}(BLACK)_{ij}$ $+\beta_{2(1)}(MALE)_{ij}+\beta_{3(1)}(Don't\ Know/Not\ Sure/Missing)_{ij}+\beta_{3(2)}(<15k)_{ij} +\beta_{3(3)}(15k\text{-}25k)_{ij}$ $+\beta_{3(4)}(25k\text{-}35k)_{ij} +\beta_{3(5)}(35k\text{-}50k)_{ij} +\beta_{4(1)}(SOME\ HS)_{ij}+\beta_{4(2)}(HS\ GRAD)_{ij} +\beta_{4(3)}(SOME$ $COLLEGE)_{ij} +\beta_{5(1)}(DISABLED)_{ij}+\beta_{6(1)}(DIABETES)_{ij}+ \beta_{7(1)}(NO\ INSURANCE)_{ij} +$ $\beta_{8}(AGE)_{ij}+ \beta_{9(1)}(UNEMPLOYED)_{ij} + \beta_{9(2)}(NEITHER\ EMPLOYED/UNEMPLOYED)_{ij} +$ $\beta_{10(1)}(RECESSION)_{ij} + \beta_{10(2)}(RECOVERY)_{ij} + \beta_{11(1)}(RURAL)_{ij} +$ $\beta_{12(1)}(RECESSION)_{ij}(OTHER)_{ij} + \beta_{12(2)}(RECOVERY)_{ij}(OTHER)_{ij} +$ $\beta_{12(3)}(RECESSION)_{ij}(AIAN)_{ij} + \beta_{12(4)}(RECOVERY)_{ij}(AIAN)_{ij} +$

$\beta_{12(5)}(\text{RECESSION})_{ij}(\text{ASIAN})_{ij} + \beta_{12(6)}(\text{RECOVERY})_{ij}(\text{ASIAN})_{ij} + \beta_{12(7)}(\text{RECESSION})_{ij}(\text{BLACK})_{ij} + \beta_{12(8)}(\text{RECOVERY})_{ij}(\text{BLACK})_{ij} + \beta_{13}(\text{STATE UNEMPLOYMENT RATE})_i + \beta_{14}(\text{STATE POVERTY RATE})_i + \beta_{15(1)}(\text{GINI-Q1})_i + \beta_{15(2)}(\text{GINI-Q1})_i + \beta_{15(3)}(\text{GINI-Q1})_i + e_{ij}$

Interpretation 1: If the Wald test of β_{15} is significant ($p \leq .05$), then we will conclude that our **outcomes** differ for differing **GINI's** measured at the state, adjusted for all other terms in the model.

Interpretation 2: If any of the Wald test of β_{10} is significant ($p \leq .05$), then we will conclude our **outcomes** differ for differing **Time-Periods**, adjusted for all other terms in the model.

Hypothesis 2B: As state income inequality increases poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost will be higher among African American, Hispanic, American Indian/Alaska Native and Asian adults than among White adults when compared to states with lower levels of income inequality.

Hypothesis 2B: **Fully Adjusted Model: Random Intercept Only with Level 1 Predictors & Level 2 Predictors & Interaction Terms**

Level-1 (Fixed Effects) Race, Sex, Income-level, Education-level, Disability, Diabetes, Insurance, Age, Employment, Time-Period, Rurality

Level-2 Poverty Rates, Unemployment Rates & GINI, with Random Level-2 State Intercept.

Interaction: Time-Period*Race

Hypothesis 2B Cross-level Interaction of interest: GINI*Race

Equation 4:

$$Y_{ij}=\beta_0+\beta_{1(1)}X_{1(OTHER)ij}+\beta_{1(2)}X_{1(AIAN)ij}+\beta_{1(3)}X_{1(ASIAN)ij}+\beta_{1(4)}X_{1(BLACK)ij}+\beta_{2(1)}X_{2(MALE)ij}$$
$$+\beta_{3(1)}X_{3(DK/NS/M)ij}+\beta_{3(2)}X_{3(<15k)ij}+\beta_{3(3)}X_{3(15k25k)ij}+\beta_{3(4)}X_{3(25k35k)ij}+\beta_{3(5)}X_{3(35k50k)ij}+\beta_{4(1)}X_{4(SOME.HS)ij}+\beta_{4(2)}X_{4(HS.GRAD)ij}+\beta_{4(3)}X_{4(SOME.COLLEGE)ij}+\beta_{5(1)}X_{5(DISABLED)ij}+\beta_{6(1)}X_{6(DIABETES)ij}+$$
$$\beta_{7(1)}X_{7(NO.INSURANCE)ij}+\beta_8X_{8ij}+\beta_{9(1)}X_{9(UNEMPLOYED)ij}+\beta_{9(2)}X_{9(NEITHER\ EMPLOYED/UNEMPLOYED)ij}+\beta_{10(1)}X_{10(RECESSION)ij}+\beta_{10(2)}X_{10(RECOVERY)ij}+\beta_{11(1)}X_{11(RURAL)ij}+$$
$$\beta_{12(1)}X_{10(RECESSION)ij}X_{1(OTHER)ij}+\beta_{12(2)}X_{10(RECOVERY)ij}X_{1(OTHER)ij}+$$
$$\beta_{12(3)}X_{10(RECESSION)ij}X_{1(AIAN)ij}+\beta_{12(4)}X_{10(RECOVERY)ij}X_{1(AIAN)ij}+$$
$$\beta_{12(5)}X_{10(RECESSION)ij}X_{1(ASIAN)ij}+\beta_{12(6)}X_{10(RECOVERY)ij}X_{1(ASIAN)ij}+$$
$$\beta_{12(7)}X_{10(RECESSION)ij}X_{1(BLACK)ij}+\beta_{12(8)}X_{10(RECOVERY)ij}X_{1(BLACK)ij}+\beta_{13}X_{13i}+\beta_{14}X_{14ii}+$$
$$\beta_{15(1)}X_{15(GINI\text{-}Q1)i}+\beta_{15(2)}X_{15(GINI\text{-}Q2)i}+\beta_{15(3)}X_{15(GINI\text{-}Q3)i}+\beta_{16(1)}X_{15i}X_{1(OTHER\text{-}Q1)ij}+$$
$$\beta_{16(2)}X_{15i}X_{1(OTHER\text{-}Q2)ij}+\beta_{16(3)}X_{15i}X_{1(OTHER\text{-}Q3)ij}+\beta_{16(4)}X_{15i}X_{1(AIAN\text{-}Q1)ij}+\beta_{16(5)}X_{15i}X_{1(AIAN\text{-}Q2)ij}+\beta_{16(6)}X_{15i}X_{1(AIAN\text{-}Q3)ij}+\beta_{16(7)}X_{15i}X_{1(ASIAN\text{-}Q1)ij}+\beta_{16(8)}X_{15i}X_{1(ASIAN\text{-}Q2)ij}+$$
$$\beta_{16(9)}X_{15i}X_{1(ASIAN\text{-}Q3)ij}+\beta_{16(10)}X_{15i}X_{1(BLACK\text{-}Q1)ij}+\beta_{16(11)}X_{15i}X_{1(BLACK\text{-}Q2)ij}+$$
$$\beta_{16(12)}X_{15i}X_{1(BLACK\text{-}Q3)ij}+e_{ij}$$

Where (Note: all definitions are adjusted for all other terms in the model),

Y_{ij} is the outcome for the *i*ith individual in the *j*th state

β_0 is the intercept, which is the overall average for our outcome

$\beta_{1(1)}X_{1(Other)ij}+\beta_{1(2)}X_{1(AIAN)ij}+\beta_{1(3)}X_{1(Asian)ij}+\beta_{1(4)}X_{1(Black)ij}$ is the linear combination of the indicators for race categories and the associated coefficients

$\beta_{2(1)}X_{2(Male)ij}$ is the linear combination of the indicators for sex categories and the associated coefficients

$\beta_{3(1)}X_{3(DK/NS/M)ij}+\beta_{3(2)}X_{3(<15k)ij}+\beta_{3(3)}X_{3(15k25k)ij}+\beta_{3(4)}X_{3(25k35k)ij}+\beta_{3(5)}X_{3(35k50k)ij}$ is the linear combination of the indicators for income categories and the associated coefficients

$\beta_{4(1)}X_{4(SOME.HS)ij}+\beta_{4(2)}X_{4(HS.GRAD)ij}+\beta_{4(3)}X_{4(SOME.COLLEGE)ij}$ is the linear combination of the indicators for education categories and the associated coefficients

$\beta_{5(1)}X_{5(DISABLED)ij}$ is the linear combination of the indicators for disability categories and the associated coefficients

$\beta_{6(1)}X_{6(DIABETES)ij}$ is the linear combination of the indicators for diabetes categories and the associated coefficients

$\beta_{7(1)}X_{7(NO\ INSURANCE)ij}$ is the linear combination of the indicators for insurance categories and the associated coefficients

$\beta_{8}X_{8ij}$ is the linear combination of the indicators for age and the associated coefficients

$\beta_{9(1)}X_{9(UNEMPLOYED)ij} + \beta_{9(2)}X_{9(NEITHER\ EMPLOYED/UNEMPLOYED)ij}$ is the linear combination of the indicators for employment categories and the associated coefficients

$\beta_{10(1)}X_{10(RECESSION)ij} + \beta_{10(2)}X_{10(RECOVERY)ij}$ is the linear combination of the indicators for time categories and the associated coefficients

$\beta_{11(1)}X_{11(RURAL)ij}$ is the linear combination of the indicators for rural categories and the associated coefficients

$\beta_{12(1)}X_{10(RECESSION)ij}X_{1(OTHER)ij} + \beta_{12(2)}X_{10(RECOVERY)ij}X_{1(OTHER)ij} +$

$\beta_{12(3)}X_{10(RECESSION)ij}X_{1(AIAN)ij} + \beta_{12(4)}X_{10(RECOVERY)ij}X_{1(AIAN)ij} +$

$\beta_{12(5)}X_{10(RECESSION)ij}X_{1(ASIAN)ij} + \beta_{12(6)}X_{10(RECOVERY)ij}X_{1(ASIAN)ij}+$ $\beta_{12(7)}X_{10(RECESSION)ij}X_{1(BLACK)ij} + \beta_{12(8)}X_{10(RECOVERY)ij}X_{1(BLACK)ij}$ is the linear combination of the indicators for time categories by race categories and the associated coefficients

$\beta_{13}X_{13i}$ is the linear combination of the indicators for continuous state-level unemployment rate and the associated coefficients, which is constant over each state, but varies across states

$\beta_{14}X_{14i}$ is the linear combination of the indicators for continuous state-level poverty rate and the associated coefficients, which is constant over each state, but varies across states

$\beta_{15(1)}X_{15(GINI\text{-}Q1)i}+ \beta_{15(2)}X_{15(GINI\text{-}Q2)i} + \beta_{15(3)}X_{15(GINI\text{-}Q3)i}$ is the linear combination of the indicators for categorical state-level Gini ratio and the associated coefficients, which is constant over each state, but varies across states

$\beta_{16(1)}X_{15i}X_{1(OTHER\text{-}Q1)ij}+ \beta_{16(2)}X_{15i}X_{1(OTHER\text{-}Q2)ij}+ \beta_{16(3)}X_{15i}X_{1(OTHER\text{-}Q3)ij} + \beta_{16(4)}X_{15i}X_{1(AIAN\text{-}Q1)ij}+ \beta_{16(5)}X_{15i}X_{1(AIAN\text{-}Q2)ij}+ \beta_{16(6)}X_{15i}X_{1(AIAN\text{-}Q3)ij} + \beta_{16(7)}X_{15i}X_{1(ASIAN\text{-}Q1)ij} + \beta_{16(8)}X_{15i}X_{1(ASIAN\text{-}Q2)ij} + \beta_{16(9)}X_{15i}X_{1(ASIAN\text{-}Q3)ij} + \beta_{16(10)}X_{15i}X_{1(BLACK\text{-}Q1)ij} + \beta_{16(11)}X_{15i}X_{1(BLACK\text{-}Q2)ij} + \beta_{16(12)}X_{15i}X_{1(BLACK\text{-}Q3)ij}$ is the linear combination of the indicators for categorical state-level Gini ratio by race categories and the associated coefficients

e_{ij} is the error term for the *i*th individual in the *j*th state

Equation 4: $Y_{ij} = \beta_0 +\beta_{1(1)}(OTHER)_{ij}+\beta_{1(2)}(AIAN)_{ij} +\beta_{1(3)}(ASIAN)_{ij} +\beta_{1(4)}(BLACK)_{ij} +\beta_{2(1)}(MALE)_{ij}+\beta_{3(1)}(Don't\ Know/Not\ Sure/Missing)_{ij}+\beta_{3(2)}(<15k)_{ij} +\beta_{3(3)}(15k\text{-}25k)_{ij} +\beta_{3(4)}(25k\text{-}35k)_{ij} +\beta_{3(5)}(35k\text{-}50k)_{ij} +\beta_{4(1)}(SOME\ HS)_{ij}+\beta_{4(2)}(HS\ GRAD)_{ij} +\beta_{4(3)}(SOME\ COLLEGE)_{ij} +\beta_{5(1)}(DISABLED)_{ij}+\beta_{6(1)}(DIABETES)_{ij}+ \beta_{7(1)}(NO\ INSURANCE)_{ij} + \beta_{8}(AGE)_{ij}+ \beta_{9(1)}(UNEMPLOYED)_{ij} + \beta_{9(2)}(NEITHER\ EMPLOYED/UNEMPLOYED)_{ij} +$

$\beta_{10(1)}(\text{RECESSION})_{ij} + \beta_{10(2)}(\text{RECOVERY})_{ij} + \beta_{11(1)}(\text{RURAL})_{ij} +$

$\beta_{12(1)}(\text{RECESSION})_{ij}(\text{OTHER})_{ij} + \beta_{12(2)}(\text{RECOVERY})_{ij}(\text{OTHER})_{ij} +$

$\beta_{12(3)}(\text{RECESSION})_{ij}(\text{AIAN})_{ij} + \beta_{12(4)}(\text{RECOVERY})_{ij}(\text{AIAN})_{ij} +$

$\beta_{12(5)}(\text{RECESSION})_{ij}(\text{ASIAN})_{ij} + \beta_{12(6)}(\text{RECOVERY})_{ij}(\text{ASIAN})_{ij} +$

$\beta_{12(7)}(\text{RECESSION})_{ij}(\text{BLACK})_{ij} + \beta_{12(8)}(\text{RECOVERY})_{ij}(\text{BLACK})_{ij} + \beta_{13}(\text{STATE}$

$\text{UNEMPLOYMENT RATE})_i + \beta_{14}(\text{STATE POVERTY RATE})_i + \beta_{15(1)}(\text{GINI-Q1})_i +$

$\beta_{15(2)}(\text{GINI-Q1})_i + \beta_{15(3)}(\text{GINI-Q1})_i + \beta_{16(1)}(\text{GINI-Q1})_i(\text{OTHER})_{ij} + \beta_{16(2)}(\text{GINI-}$

$\text{Q2})_i(\text{OTHER})_{ij} + \beta_{16(3)}(\text{GINI-Q3})_i(\text{OTHER})_{ij} + \beta_{16(4)}(\text{GINI-Q1})_i(\text{AIAN})_{ij} + \beta_{16(5)}(\text{GINI-}$

$\text{Q2})_i(\text{AIAN})_{ij} + \beta_{16(6)}(\text{GINI-Q3})_i(\text{AIAN})_{ij} + \beta_{16(7)}(\text{GINI-Q1})_i(\text{ASIAN})_{ij} + \beta_{16(8)}(\text{GINI-}$

$\text{Q2})_i(\text{ASIAN})_{ij} + \beta_{16(9)}(\text{GINI-Q3})_i(\text{ASIAN})_{ij} + \beta_{16(10)}(\text{GINI-Q1})_i(\text{BLACK})_{ij} +$

$\beta_{16(11)}(\text{GINI-Q2})_i(\text{BLACK})_{ij} + \beta_{16(12)}(\text{GINI-Q3})_i(\text{BLACK})_{ij} + e_{ij}$

Interpretation: If any Wald test of β_{16} is significant ($p \leq .05$), then we will conclude there is a differential effect for our outcomes on **Race** by different **GINI's** measured at the state, adjusted for all other terms in the model.

Aim 3: To measure the extent that state-level Medicaid variation in coverage (differences in eligibility defined as the Percent of Federal Poverty for parents and childless adults) affect the degree (change between three time periods: pre-Recession, during the Recession & post-Recession) to which populations were burdened by the Recession.

Hypothesis 3A: Among working age adults, poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost will be lower for states with higher Medicaid Generosity (differences in eligibility defined as the Percent of Federal Poverty for parents and childless adults).

Hypothesis 3A: **Fully Adjusted Model: Random Intercept Only with Level 1 Predictors & Level 2 Predictors & Interaction Terms**

Level-1 (Fixed Effects) Race, Sex, Income-level, Education-level, Disability, Diabetes, Insurance, Age, Employment, Time-Period, Rurality

Level-2 Poverty Rates, Unemployment Rates & GINI, Medicaid Generosity with Random Level-2 State Intercept.

Interaction: Time-Period*Race

Cross-level Interaction: GINI*Race

Hypothesis 3A Main Effect of Interest: Medicaid Generosity

Note: Aim 3 is absent of GINI, models are left as they were proposed in the case (i.e. including GINI until the final papers are written in the case these models are needed for publication purposes)

Equation 5:

$$Y_{ij}=\beta_0+\beta_{1(1)}X_{1(OTHER)ij}+\beta_{1(2)}X_{1(AIAN)ij}+\beta_{1(3)}X_{1(ASIAN)ij}+\beta_{1(4)}X_{1(BLACK)ij}+\beta_{2(1)}X_{2(MALE)ij}$$
$$+\beta_{3(1)}X_{3(DK/NS/M)ij}+\beta_{3(2)}X_{3(<15k)ij}+\beta_{3(3)}X_{3(15k25k)ij}+\beta_{3(4)}X_{3(25k35k)ij}+\beta_{3(5)}X_{3(35k50k)ij}+\beta_{4(1)}X_{4(SOME.HS)ij}+\beta_{4(2)}X_{4(HS.GRAD)ij}+\beta_{4(3)}X_{4(SOME.COLLEGE)ij}+\beta_{5(1)}X_{5(DISABLED)ij}+\beta_{6(1)}X_{6(DIABETES)ij}+$$
$$\beta_{7(1)}X_{7(NO.INSURANCE)ij}+\beta_{8}X_{8ij}+\beta_{9(1)}X_{9(UNEMPLOYED)ij}+\beta_{9(2)}X_{9(NEITHER\ EMPLOYED/UNEMPLOYED)ij}+\beta_{10(1)}X_{10(RECESSION)ij}+\beta_{10(2)}X_{10(RECOVERY)ij}+\beta_{11(1)}X_{11(RURAL)ij}+$$
$$\beta_{12(1)}X_{10(RECESSION)ij}X_{1(OTHER)ij}+\beta_{12(2)}X_{10(RECOVERY)ij}X_{1(OTHER)ij}+$$
$$\beta_{12(3)}X_{10(RECESSION)ij}X_{1(AIAN)ij}+\beta_{12(4)}X_{10(RECOVERY)ij}X_{1(AIAN)ij}+$$
$$\beta_{12(5)}X_{10(RECESSION)ij}X_{1(ASIAN)ij}+\beta_{12(6)}X_{10(RECOVERY)ij}X_{1(ASIAN)ij}+$$

$\beta_{12(7)}X_{10(RECESSION)ij}X_{1(BLACK)ij} + \beta_{12(8)}X_{10(RECOVERY)ij}X_{1(BLACK)ij} + \beta_{13}X_{13i} + \beta_{14}X_{14ii} +$

$\beta_{15(1)}X_{15(GINI\text{-}Q1)i} + \beta_{15(2)}X_{15(GINI\text{-}Q2)i} + \beta_{15(3)}X_{15(GINI\text{-}Q3)i} + \beta_{16(1)}X_{15i}X_{1(OTHER\text{-}Q1)ij} +$

$\beta_{16(2)}X_{15i}X_{1(OTHER\text{-}Q2)ij} + \beta_{16(3)}X_{15i}X_{1(OTHER\text{-}Q3)ij} + \beta_{16(4)}X_{15i}X_{1(AIAN\text{-}Q1)ij} + \beta_{16(5)}X_{15i}X_{1(AIAN\text{-}Q2)ij} + \beta_{16(6)}X_{15i}X_{1(AIAN\text{-}Q3)ij} + \beta_{16(7)}X_{15i}X_{1(ASIAN\text{-}Q1)ij} + \beta_{16(8)}X_{15i}X_{1(ASIAN\text{-}Q2)ij} +$

$\beta_{16(9)}X_{15i}X_{1(ASIAN\text{-}Q3)ij} + \beta_{16(10)}X_{15i}X_{1(BLACK\text{-}Q1)ij} + \beta_{16(11)}X_{15i}X_{1(BLACK\text{-}Q2)ij} +$

$\beta_{16(12)}X_{15i}X_{1(BLACK\text{-}Q3)ij} + \beta_{17(1)}X_{17(PARENTS\ <100\%FPL)i} + e_{ij}$

When modeling Medicaid Generosity for childless adults β17 takes the following form: $\beta_{17(1)}X_{17(CA\ NO\ COVERAGE)i} + \beta_{17(1)}X_{17(CA\ COVERAGE\ <133\%FPL)i}$

Where (Note: all definitions are adjusted for all other terms in the model),

Y_{ij} is the outcome for the *i*ith individual in the *j*th state

β_0 is the intercept, which is the overall average for our outcome

$\beta_{1(1)}X_{1(Other)ij} + \beta_{1(2)}X_{1(AIAN)ij} + \beta_{1(3)}X_{1(Asian)ij} + \beta_{1(4)}X_{1(Black)ij}$ is the linear combination of the indicators for race categories and the associated coefficients

$\beta_{2(1)}X_{2(Male)ij}$ is the linear combination of the indicators for sex categories and the associated coefficients

$\beta_{3(1)}X_{3(DK/NS/M)ij} + \beta_{3(2)}X_{3(<15k)ij} + \beta_{3(3)}X_{3(15k25k)ij} + \beta_{3(4)}X_{3(25k35k)ij} + \beta_{3(5)}X_{3(35k50k)ij}$ is the linear combination of the indicators for income categories and the associated coefficients

$\beta_{4(1)}X_{4(SOME.HS)ij} + \beta_{4(2)}X_{4(HS.GRAD)ij} + \beta_{4(3)}X_{4(SOME.COLLEGE)ij}$ is the linear combination of the indicators for education categories and the associated coefficients

$\beta_{5(1)}X_{5(DISABLED)ij}$ is the linear combination of the indicators for disability categories and the associated coefficients

$\beta_{6(1)}X_{6(\text{DIABETES})ij}$ is the linear combination of the indicators for diabetes categories and the associated coefficients

$\beta_{7(1)}X_{7(\text{NO INSURANCE})ij}$ is the linear combination of the indicators for insurance categories and the associated coefficients

β_8X_{8ij} is the linear combination of the indicators for age and the associated coefficients

$\beta_{9(1)}X_{9(\text{UNEMPLOYED})ij} + \beta_{9(2)}X_{9(\text{NEITHER EMPLOYED/UNEMPLOYED})ij}$ is the linear combination of the indicators for employment categories and the associated coefficients

$\beta_{10(1)}X_{10(\text{RECESSION})ij} + \beta_{10(2)}X_{10(\text{RECOVERY})ij}$ is the linear combination of the indicators for time categories and the associated coefficients

$\beta_{11(1)}X_{11(\text{RURAL})ij}$ is the linear combination of the indicators for rural categories and the associated coefficients

$\beta_{12(1)}X_{10(\text{RECESSION})ij}X_{1(\text{OTHER})ij} + \beta_{12(2)}X_{10(\text{RECOVERY})ij}X_{1(\text{OTHER})ij} +$

$\beta_{12(3)}X_{10(\text{RECESSION})ij}X_{1(\text{AIAN})ij} + \beta_{12(4)}X_{10(\text{RECOVERY})ij}X_{1(\text{AIAN})ij} +$

$\beta_{12(5)}X_{10(\text{RECESSION})ij}X_{1(\text{ASIAN})ij} + \beta_{12(6)}X_{10(\text{RECOVERY})ij}X_{1(\text{ASIAN})ij}+$

$\beta_{12(7)}X_{10(\text{RECESSION})ij}X_{1(\text{BLACK})ij} + \beta_{12(8)}X_{10(\text{RECOVERY})ij}X_{1(\text{BLACK})ij}$ is the linear combination of the indicators for time categories by race categories and the associated coefficients

$\beta_{13}X_{13i}$ is the linear combination of the indicators for continuous state-level unemployment rate and the associated coefficients, which is constant over each state, but varies across states

$\beta_{14}X_{14i}$ is the linear combination of the indicators for continuous state-level poverty rate and the associated coefficients, which is constant over each state, but varies across states

$\beta_{15(1)}X_{15(GINI\text{-}Q1)i}+ \beta_{15(2)}X_{15(GINI\text{-}Q2)i} + \beta_{15(3)}X_{15(GINI\text{-}Q3)i}$ is the linear combination of the indicators for categorical state-level Gini ratio and the associated coefficients, which is constant over each state, but varies across states

$\beta_{16(1)}X_{15i}X_{1(OTHER\text{-}Q1)ij}+ \beta_{16(2)}X_{15i}X_{1(OTHER\text{-}Q2)ij}+ \beta_{16(3)}X_{15i}X_{1(OTHER\text{-}Q3)ij} + \beta_{16(4)}X_{15i}X_{1(AIAN\text{-}Q1)ij}+ \beta_{16(5)}X_{15i}X_{1(AIAN\text{-}Q2)ij}+ \beta_{16(6)}X_{15i}X_{1(AIAN\text{-}Q3)ij} + \beta_{16(7)}X_{15i}X_{1(ASIAN\text{-}Q1)ij} + \beta_{16(8)}X_{15i}X_{1(ASIAN\text{-}Q2)ij} + \beta_{16(9)}X_{15i}X_{1(ASIAN\text{-}Q3)ij} + \beta_{16(10)}X_{15i}X_{1(BLACK\text{-}Q1)ij} + \beta_{16(11)}X_{15i}X_{1(BLACK\text{-}Q2)ij} + \beta_{16(12)}X_{15i}X_{1(BLACK\text{-}Q3)ij}$ is the linear combination of the indicators for categorical state-level Gini ratio by race categories and the associated coefficients

$\beta_{17(1)}X_{17(PARENTS\ <100\%FPL)i}$ is the linear combination of the indicators for state-level Medicaid Generosity and the associated coefficients

e_{ij} is the error term for the *i*th individual in the *j*th state

When modeling Medicaid Generosity for childless adults β17 takes the following form: $\beta_{17(1)}X_{17(CA\ NO\ COVERAGE)i}+\beta_{17(1)}X_{17(CA\ COVERAGE\ <133\%FPL)i}$

$\beta_{17(1)}X_{17(CA\ NO\ COVERAGE)i}+\beta_{17(1)}X_{17(CA\ COVERAGE\ <133\%FPL)i}$ is the linear combination of the indicators for state-level Medicaid Generosity and the associated coefficients

Equation 5: $Y_{ij} = \beta_0 +\beta_{1(1)}(OTHER)_{ij}+\beta_{1(2)}(AIAN)_{ij} +\beta_{1(3)}(ASIAN)_{ij} +\beta_{1(4)}(BLACK)_{ij} +\beta_{2(1)}(MALE)_{ij}+\beta_{3(1)}(Don't\ Know/Not\ Sure/Missing)_{ij}+\beta_{3(2)}(<15k)_{ij} +\beta_{3(3)}(15k\text{-}25k)_{ij} +\beta_{3(4)}(25k\text{-}35k)_{ij} +\beta_{3(5)}(35k\text{-}50k)_{ij} +\beta_{4(1)}(SOME\ HS)_{ij}+\beta_{4(2)}(HS\ GRAD)_{ij} +\beta_{4(3)}(SOME\ COLLEGE)_{ij} +\beta_{5(1)}(DISABLED)_{ij}+\beta_{6(1)}(DIABETES)_{ij}+ \beta_{7(1)}(NO\ INSURANCE)_{ij} + \beta_{8}(AGE)_{ij}+ \beta_{9(1)}(UNEMPLOYED)_{ij} + \beta_{9(2)}(NEITHER\ EMPLOYED/UNEMPLOYED)_{ij} + \beta_{10(1)}(RECESSION)_{ij} + \beta_{10(2)}(RECOVERY)_{ij} + \beta_{11(1)}(RURAL)_{ij} + \beta_{12(1)}(RECESSION)_{ij}(OTHER)_{ij} + \beta_{12(2)}(RECOVERY)_{ij}(OTHER)_{ij} +$

$\beta_{12(3)}(\text{RECESSION})_{ij}(\text{AIAN})_{ij} + \beta_{12(4)}(\text{RECOVERY})_{ij}(\text{AIAN})_{ij} +$

$\beta_{12(5)}(\text{RECESSION})_{ij}(\text{ASIAN})_{ij} + \beta_{12(6)}(\text{RECOVERY})_{ij}(\text{ASIAN})_{ij} +$

$\beta_{12(7)}(\text{RECESSION})_{ij}(\text{BLACK})_{ij} + \beta_{12(8)}(\text{RECOVERY})_{ij}(\text{BLACK})_{ij} + \beta_{13}(\text{STATE}$

$\text{UNEMPLOYMENT RATE})_i + \beta_{14}(\text{STATE POVERTY RATE})_i + \beta_{15(1)}(\text{GINI-Q1})_i +$

$\beta_{15(2)}(\text{GINI-Q1})_i + \beta_{15(3)}(\text{GINI-Q1})_i + \beta_{16(1)}(\text{GINI-Q1})_i(\text{OTHER})_{ij} + \beta_{16(2)}(\text{GINI-}$

$\text{Q2})_i(\text{OTHER})_{ij} + \beta_{16(3)}(\text{GINI-Q3})_i(\text{OTHER})_{ij} + \beta_{16(4)}(\text{GINI-Q1})_i(\text{AIAN})_{ij} + \beta_{16(5)}(\text{GINI-}$

$\text{Q2})_i(\text{AIAN})_{ij} + \beta_{16(6)}(\text{GINI-Q3})_i(\text{AIAN})_{ij} + \beta_{16(7)}(\text{GINI-Q1})_i(\text{ASIAN})_{ij} + \beta_{16(8)}(\text{GINI-}$

$\text{Q2})_i(\text{ASIAN})_{ij} + \beta_{16(9)}(\text{GINI-Q3})_i(\text{ASIAN})_{ij} + \beta_{16(10)}(\text{GINI-Q1})_i(\text{BLACK})_{ij} +$

$\beta_{16(11)}(\text{GINI-Q2})_i(\text{BLACK})_{ij} + \beta_{16(12)}(\text{GINI-Q3})_i(\text{BLACK})_{ij} + \beta_{17}(\text{MEDICAID}$

$\text{GENEROSITY})_i + e_{ij}$

When modeling Medicaid Generosity for childless adults β17 takes the following form: $\beta_{17(1)}(\text{CA NO COVERAGE})_i + \beta_{17(1)}(\text{CA COVERAGE <133\%FPL})_i$

$\beta_{17(1)}(\text{CA NO COVERAGE})_i + \beta_{17(1)}(\text{CA COVERAGE <133\%FPL})_i$

Interpretation: If the Wald test of β_{17} is significant ($p \leq .05$), then we conclude there is a difference for our outcomes on Medicaid Generosity, adjusted for all other terms in the model.

Hypothesis 3B: Among working age adults, poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost will be lower for states with higher Medicaid Generosity and that differences for poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost among African American, Hispanic, American Indian/Alaska Native and Asian adults as compared to White adults will be

smaller when compared to states without this Generosity. These changes will be assessed across 2004 - 2010 for change in poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost among African American, Hispanic, American Indian/Alaska Native and Asian adults as compared to White adults.

Hypothesis 3B: **Fully Adjusted Model: Random Intercept Only with Level 1 Predictors & Level 2 Predictors & Interaction Terms**

Level-1 (Fixed Effects) Race, Sex, Income-level, Education-level, Disability, Diabetes, Insurance, Age, Employment, Time-Period, Rurality

Level-2 Poverty Rates, Unemployment Rates & GINI, Medicaid Generosity with Random Level-2 State Intercept.

Interaction: Time-Period*Race

Cross-level Interaction: GINI*Race

Hypothesis 3B Cross-Level Interactions of Interest: Medicaid Generosity* Time-Period, Medicaid Generosity*Race, Medicaid Generosity*Race*Time-Period

Equation 6:

$$Y_{ij}=\beta_0+\beta_{1(1)}X_{1(OTHER)ij}+\beta_{1(2)}X_{1(AIAN)ij}+\beta_{1(3)}X_{1(ASIAN)ij}+\beta_{1(4)}X_{1(BLACK)ij}+\beta_{2(1)}X_{2(MALE)ij}$$
$$+\beta_{3(1)}X_{3(DK/NS/M)ij}+\beta_{3(2)}X_{3(<15k)ij}+\beta_{3(3)}X_{3(15k25k)ij}+\beta_{3(4)}X_{3(25k35k)ij}+\beta_{3(5)}X_{3(35k50k)ij}+\beta_{4(1)}X_{4(SOME.HS)ij}+\beta_{4(2)}X_{4(HS.GRAD)ij}+\beta_{4(3)}X_{4(SOME.COLLEGE)ij}+\beta_{5(1)}X_{5(DISABLED)ij}+\beta_{6(1)}X_{6(DIABETES)ij}+$$
$$\beta_{7(1)}X_{7(NO.INSURANCE)ij}+\beta_{8}X_{8ij}+\beta_{9(1)}X_{9(UNEMPLOYED)ij}+\beta_{9(2)}X_{9(NEITHER\ EMPLOYED/UNEMPLOYED)ij}+\beta_{10(1)}X_{10(RECESSION)ij}+\beta_{10(2)}X_{10(RECOVERY)ij}+\beta_{11(1)}X_{11(RURAL)ij}+$$

$\beta_{12(1)}X_{10(RECESSION)ij}X_{1(OTHER)ij} + \beta_{12(2)}X_{10(RECOVERY)ij}X_{1(OTHER)ij} +$

$\beta_{12(3)}X_{10(RECESSION)ij}X_{1(AIAN)ij} + \beta_{12(4)}X_{10(RECOVERY)ij}X_{1(AIAN)ij} +$

$\beta_{12(5)}X_{10(RECESSION)ij}X_{1(ASIAN)ij} + \beta_{12(6)}X_{10(RECOVERY)ij}X_{1(ASIAN)ij} +$

$\beta_{12(7)}X_{10(RECESSION)ij}X_{1(BLACK)ij} + \beta_{12(8)}X_{10(RECOVERY)ij}X_{1(BLACK)ij} + \beta_{13}X_{13i} + \beta_{14}X_{14ii} +$

$\beta_{15}X_{15i} + \beta_{16(1)}X_{15i}X_{1(OTHER-Q1)ij} + \beta_{16(2)}X_{15i}X_{1(OTHER-Q2)ij} + \beta_{16(3)}X_{15i}X_{1(OTHER-Q3)ij} +$

$\beta_{16(4)}X_{15i}X_{1(AIAN-Q1)ij} + \beta_{16(5)}X_{15i}X_{1(AIAN-Q2)ij} + \beta_{16(6)}X_{15i}X_{1(AIAN-Q3)ij} + \beta_{16(7)}X_{15i}X_{1(ASIAN-Q1)ij}$

$+ \beta_{16(8)}X_{15i}X_{1(ASIAN-Q2)ij} + \beta_{16(9)}X_{15i}X_{1(ASIAN-Q3)ij} + \beta_{16(10)}X_{15i}X_{1(BLACK-Q1)ij} +$

$\beta_{16(11)}X_{15i}X_{1(BLACK-Q2)ij} + \beta_{16(12)}X_{15i}X_{1(BLACK-Q3)ij} + \beta_{17(1)}X_{17(PARENTS\ <100\%FPL)i} +$

$\beta_{18(1)}X_{17(PARENTS\ <100\%FPL)i}X_{10(RECESSION)ij} + \beta_{18(2)}X_{17(PARENTS\ <100\%FPL)i}X_{10(RECOVERY)ij} +$

$\beta_{19(1)}X_{17(PARENT<100\%FPL)i}X_{1(OTHER)ij} + \beta_{19(2)}X_{17(PARENT<100\%FPL)i}X_{1(AIAN)ij} +$

$\beta_{19(3)}X_{17(PARENT<100\%FPL)i}X_{1(ASIAN)ij} + \beta_{19(4)}X_{17(PARENT<100\%FPL)i}X_{1(BLACK)ij} +$

$\beta_{20(1)}X_{17(PARENTS<100\%FPL)i}X_{10(RECESSION)ij}X_{1(OTHER)ij} +$

$\beta_{20(2)}X_{17(PARENTS<100\%FPL)i}X_{10(RECOVERY)ij}X_{1(OTHER)ij} +$

$\beta_{20(3)}X_{17(PARENTS<100\%FPL)i}X_{10(RECESSION)ij}X_{1(AIAN)ij} +$

$\beta_{20(4)}X_{17(PARENTS<100\%FPL)i}X_{10(RECOVERY)ij}X_{1(AIAN)ij} +$

$\beta_{20(5)}X_{17(PARENTS<100\%FPL)i}X_{10(RECESSION)ij}X_{1(ASIAN)ij} +$

$\beta_{20(6)}X_{17(PARENTS<100\%FPL)i}X_{10(RECOVERY)ij}X_{1(ASIAN)ij} +$

$\beta_{20(1)}X_{17(PARENTS<100\%FPL)i}X_{10(RECESSION)ij}X_{1(BLACK)ij} +$

$\beta_{20(2)}X_{17(PARENTS<100\%FPL)i}X_{10(RECOVERY)ij}X_{1(BLACK)ij} + e_{ij}$

When modeling Medicaid Generosity for childless adults β17, β18, β19 & β20 take the following form:

$\beta_{17(1)}X_{17(CA\ NO\ COVERAGE)i} + \beta_{17(1)}X_{17(CA\ COVERAGE\ <133\%FPL)i} +$

$\beta_{18(1)}X_{17(CA\ NO\ COVERAGE)i}X_{10(RECESSION)ij} + \beta_{18(2)}X_{17(CA\ NO\ COVERAGE)i}X_{10(RECOVERY)ij} +$

$\beta_{18(3)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECESSION})ij} + \beta_{18(4)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECOVERY})ij} + \beta_{19(1)}X_{17(\text{CA NO COVERAGE})i}X_{1(\text{OTHER})ij} + \beta_{19(2)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{1(\text{OTHER})ij} + \beta_{19(3)}X_{17(\text{CA NO COVERAGE})i}X_{1(\text{AIAN})ij} + \beta_{19(4)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{1(\text{AIAN})ij} + \beta_{19(5)}X_{17(\text{CA NO COVERAGE})i}X_{1(\text{ASIAN})ij} + \beta_{19(6)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{1(\text{ASIAN})ij} + \beta_{19(7)}X_{17(\text{CA NO COVERAGE})i}X_{1(\text{BLACK})ij} + \beta_{19(8)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{1(\text{BLACK})ij} + \beta_{20(1)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECESSION})ij}X_{1(\text{OTHER})ij} +$

$\beta_{20(2)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECESSION})ij}X_{1(\text{OTHER})ij} +$

$\beta_{20(3)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECOVERY})ij}X_{1(\text{OTHER})ij} +$

$\beta_{20(4)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECOVERY})ij}X_{1(\text{OTHER})ij} +$

$\beta_{20(5)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECESSION})ij}X_{1(\text{AIAN})ij} +$

$\beta_{20(6)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECESSION})ij}X_{1(\text{AIAN})ij} +$

$\beta_{20(7)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECOVERY})ij}X_{1(\text{AIAN})ij} +$

$\beta_{20(8)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECOVERY})ij}X_{1(\text{AIAN})ij} +$

$\beta_{20(9)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECESSION})ij}X_{1(\text{ASIAN})ij} +$

$\beta_{20(10)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECESSION})ij}X_{1(\text{ASIAN})ij} +$

$\beta_{20(11)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECOVERY})ij}X_{1(\text{ASIAN})ij} +$

$\beta_{20(12)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECOVERY})ij}X_{1(\text{ASIAN})ij} +$

$\beta_{20(13)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECESSION})ij}X_{1(\text{BLACK})ij} +$

$\beta_{20(14)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECESSION})ij}X_{1(\text{BLACK})ij} +$

$\beta_{20(15)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECOVERY})ij}X_{1(\text{BLACK})ij} +$

$\beta_{20(16)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECOVERY})ij}X_{1(\text{BLACK})ij} +$

Where (Note: all definitions are adjusted for all other terms in the model),

Y_{ij} is the outcome for the *i*ith individual in the *j*th state

β_0 is the intercept, which is the overall average for our outcome

$\beta_{1(1)}X_{1(Other)ij}+\beta_{1(2)}X_{1(AIAN)ij}+\beta_{1(3)}X_{1(Asian)ij}+\beta_{1(4)}X_{1(Black)ij}$ is the linear combination of the indicators for race categories and the associated coefficients

$\beta_{2(1)}X_{2(Male)ij}$ is the linear combination of the indicators for sex categories and the associated coefficients

$\beta_{3(1)}X_{3(DK/NS/M)ij}+\beta_{3(2)}X_{3(<15k)ij}+\beta_{3(3)}X_{3(15k25k)ij}+\beta_{3(4)}X_{3(25k35k)ij}+\beta_{3(5)}X_{3(35k50k)ij}$ is the linear combination of the indicators for income categories and the associated coefficients

$\beta_{4(1)}X_{4(SOME.HS)ij}+\beta_{4(2)}X_{4(HS.GRAD)ij}+\beta_{4(3)}X_{4(SOME.COLLEGE)ij}$ is the linear combination of the indicators for education categories and the associated coefficients

$\beta_{5(1)}X_{5(DISABLED)ij}$ is the linear combination of the indicators for disability categories and the associated coefficients

$\beta_{6(1)}X_{6(DIABETES)ij}$ is the linear combination of the indicators for diabetes categories and the associated coefficients

$\beta_{7(1)}X_{7(NO\ INSURANCE)ij}$ is the linear combination of the indicators for insurance categories and the associated coefficients

β_8X_{8ij} is the linear combination of the indicators for age and the associated coefficients

$\beta_{9(1)}X_{9(UNEMPLOYED)ij} + \beta_{9(2)}X_{9(NEITHER\ EMPLOYED/UNEMPLOYED)ij}$ is the linear combination of the indicators for employment categories and the associated coefficients

$\beta_{10(1)}X_{10(RECESSION)ij} + \beta_{10(2)}X_{10(RECOVERY)ij}$ is the linear combination of the indicators for time categories and the associated coefficients

$\beta_{11(1)}X_{11(RURAL)ij}$ is the linear combination of the indicators for rural categories and the associated coefficients

$\beta_{12(1)}X_{10(RECESSION)ij}X_{1(OTHER)ij} + \beta_{12(2)}X_{10(RECOVERY)ij}X_{1(OTHER)ij} +$

$\beta_{12(3)}X_{10(RECESSION)ij}X_{1(AIAN)ij} + \beta_{12(4)}X_{10(RECOVERY)ij}X_{1(AIAN)ij} +$

$\beta_{12(5)}X_{10(RECESSION)ij}X_{1(ASIAN)ij} + \beta_{12(6)}X_{10(RECOVERY)ij}X_{1(ASIAN)ij}+$

$\beta_{12(7)}X_{10(RECESSION)ij}X_{1(BLACK)ij} + \beta_{12(8)}X_{10(RECOVERY)ij}X_{1(BLACK)ij}$ is the linear combination of the indicators for time categories by race categories and the associated coefficients

$\beta_{13}X_{13i}$ is the linear combination of the indicators for continuous state-level unemployment rate and the associated coefficients, which is constant over each state, but varies across states

$\beta_{14}X_{14i}$ is the linear combination of the indicators for continuous state-level poverty rate and the associated coefficients, which is constant over each state, but varies across states

$\beta_{15(1)}X_{15(GINI\text{-}Q1)i}+ \beta_{15(2)}X_{15(GINI\text{-}Q2)i} + \beta_{15(3)}X_{15(GINI\text{-}Q3)i}$ is the linear combination of the indicators for categorical state-level Gini ratio and the associated coefficients, which is constant over each state, but varies across states

$\beta_{16(1)}X_{15i}X_{1(OTHER\text{-}Q1)ij}+ \beta_{16(2)}X_{15i}X_{1(OTHER\text{-}Q2)ij}+ \beta_{16(3)}X_{15i}X_{1(OTHER\text{-}Q3)ij} + \beta_{16(4)}X_{15i}X_{1(AIAN\text{-}Q1)ij}+ \beta_{16(5)}X_{15i}X_{1(AIAN\text{-}Q2)ij}+ \beta_{16(6)}X_{15i}X_{1(AIAN\text{-}Q3)ij} + \beta_{16(7)}X_{15i}X_{1(ASIAN\text{-}Q1)ij} +$

$\beta_{16(8)}X_{15i}X_{1(ASIAN\text{-}Q2)ij} + \beta_{16(9)}X_{15i}X_{1(ASIAN\text{-}Q3)ij} + \beta_{16(10)}X_{15i}X_{1(BLACK\text{-}Q1)ij} +$

$\beta_{16(11)}X_{15i}X_{1(BLACK\text{-}Q2)ij} + \beta_{16(12)}X_{15i}X_{1(BLACK\text{-}Q3)ij}$ is the linear combination of the indicators for categorical state-level Gini ratio by race categories and the associated coefficients

$\beta_{17(1)}X_{17(PARENTS\ <100\%FPL)i}$ is the linear combination of the indicators for state-level Medicaid Generosity and the associated coefficients

$\beta_{18(1)}X_{17(\text{PARENTS <100\%FPL})i}X_{10(\text{RECESSION})ij} + \beta_{18(2)}X_{17(\text{PARENTS<100\%FPL})i}X_{10(\text{RECOVERY})ij}$ is the linear combination of the indicators for state-level Medicaid Generosity by time categories and the associated coefficients

$\beta_{19(1)}X_{17(\text{PARENT<100\%FPL})i}X_{1(\text{OTHER})ij} + \beta_{19(2)}X_{17(\text{PARENT<100\%FPL})i}X_{1(\text{AIAN})ij} +$ $\beta_{19(3)}X_{17(\text{PARENT<100\%FPL})i}X_{1(\text{ASIAN})ij} + \beta_{19(4)}X_{17(\text{PARENT<100\%FPL})i}X_{1(\text{BLACK})ij}$ is the linear combination of the indicators for state-level Medicaid Generosity by race categories and the associated coefficients

$\beta_{20(1)}X_{17(\text{PARENTS<100\%FPL})i}X_{10(\text{RECESSION})ij}X_{1(\text{OTHER})ij} +$
$\beta_{20(2)}X_{17(\text{PARENTS<100\%FPL})i}X_{10(\text{RECOVERY})ij}X_{1(\text{OTHER})ij} +$
$\beta_{20(3)}X_{17(\text{PARENTS<100\%FPL})i}X_{10(\text{RECESSION})ij}X_{1(\text{AIAN})ij} +$
$\beta_{20(4)}X_{17(\text{PARENTS<100\%FPL})i}X_{10(\text{RECOVERY})ij}X_{1(\text{AIAN})ij} +$
$\beta_{20(5)}X_{17(\text{PARENTS<100\%FPL})i}X_{10(\text{RECESSION})ij}X_{1(\text{ASIAN})ij} +$
$\beta_{20(6)}X_{17(\text{PARENTS<100\%FPL})i}X_{10(\text{RECOVERY})ij}X_{1(\text{ASIAN})ij} +$
$\beta_{20(1)}X_{17(\text{PARENTS<100\%FPL})i}X_{10(\text{RECESSION})ij}X_{1(\text{BLACK})ij} +$
$\beta_{20(2)}X_{17(\text{PARENTS<100\%FPL})i}X_{10(\text{RECOVERY})ij}X_{1(\text{BLACK})ij}$ is the linear combination of the indicators for state-level Medicaid Generosity by race categories & time categories and the associated coefficients

e_{ij} is the error term for the *i*th individual in the *j*th state

When modeling Medicaid Generosity for childless adults β17 takes the following form:

$\beta_{17(1)}X_{17(\text{CA NO COVERAGE})i} + \beta_{17(1)}X_{17(\text{CA COVERAGE <133\%FPL})i}$ is the linear combination of the indicators for state-level Medicaid Generosity and the associated coefficients

When modeling Medicaid Generosity for childless adults β18 takes the following form:

$\beta_{18(1)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECESSION})ij} + \beta_{18(2)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECOVERY})ij} +$

$\beta_{18(3)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECESSION})ij} + \beta_{18(4)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECOVERY})ij}$ is the linear combination of the indicators for state-level Medicaid Generosity by time categories and the associated coefficients

When modeling Medicaid Generosity for childless adults β19 takes the following form:

$\beta_{19(1)}X_{17(\text{CA NO COVERAGE})i}X_{1(\text{OTHER})ij} + \beta_{19(2)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{1(\text{OTHER})ij} +$

$\beta_{19(3)}X_{17(\text{CA NO COVERAGE})i}X_{1(\text{AIAN})ij} + \beta_{19(4)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{1(\text{AIAN})ij} +$

$\beta_{19(5)}X_{17(\text{CA NO COVERAGE})i}X_{1(\text{ASIAN})ij} + \beta_{19(6)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{1(\text{ASIAN})ij} +$

$\beta_{19(7)}X_{17(\text{CA NO COVERAGE})i}X_{1(\text{BLACK})ij} + \beta_{19(8)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{1(\text{BLACK})ij}$ is the linear combination of the indicators for state-level Medicaid Generosity by race categories and the associated coefficients

When modeling Medicaid Generosity for childless adults β20 takes the following form:

$\beta_{20(1)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECESSION})ij}X_{1(\text{OTHER})ij} +$

$\beta_{20(2)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECESSION})ij}X_{1(\text{OTHER})ij} +$

$\beta_{20(3)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECOVERY})ij}X_{1(\text{OTHER})ij} +$

$\beta_{20(4)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECOVERY})ij}X_{1(\text{OTHER})ij} +$

$\beta_{20(5)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECESSION})ij}X_{1(\text{AIAN})ij} +$

$\beta_{20(6)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECESSION})ij}X_{1(\text{AIAN})ij} +$

$\beta_{20(7)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECOVERY})ij}X_{1(\text{AIAN})ij}$ +

$\beta_{20(8)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECOVERY})ij}X_{1(\text{AIAN})ij}$ +

$\beta_{20(9)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECESSION})ij}X_{1(\text{ASIAN})ij}$ +

$\beta_{20(10)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECESSION})ij}X_{1(\text{ASIAN})ij}$ +

$\beta_{20(11)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECOVERY})ij}X_{1(\text{ASIAN})ij}$ +

$\beta_{20(12)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECOVERY})ij}X_{1(\text{ASIAN})ij}$ +

$\beta_{20(13)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECESSION})ij}X_{1(\text{BLACK})ij}$ +

$\beta_{20(14)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECESSION})ij}X_{1(\text{BLACK})ij}$ +

$\beta_{20(15)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECOVERY})ij}X_{1(\text{BLACK})ij}$ +

$\beta_{20(16)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECOVERY})ij}X_{1(\text{BLACK})ij}$ is the linear combination of the indicators for state-level Medicaid Generosity by race categories & time categories and the associated coefficients

Equation 6: $Y_{ij} = \beta_0 + \beta_{1(1)}(\text{OTHER})_{ij} + \beta_{1(2)}(\text{AIAN})_{ij} + \beta_{1(3)}(\text{ASIAN})_{ij} + \beta_{1(4)}(\text{BLACK})_{ij} + \beta_{2(1)}(\text{MALE})_{ij} + \beta_{3(1)}(\text{Don't Know/Not Sure/Missing})_{ij} + \beta_{3(2)}(\text{<15k})_{ij} + \beta_{3(3)}(\text{15k-25k})_{ij} + \beta_{3(4)}(\text{25k-35k})_{ij} + \beta_{3(5)}(\text{35k-50k})_{ij} + \beta_{4(1)}(\text{SOME HS})_{ij} + \beta_{4(2)}(\text{HS GRAD})_{ij} + \beta_{4(3)}(\text{SOME COLLEGE})_{ij} + \beta_{5(1)}(\text{DISABLED})_{ij} + \beta_{6(1)}(\text{DIABETES})_{ij} + \beta_{7(1)}(\text{NO INSURANCE})_{ij} + \beta_8(\text{AGE})_{ij} + \beta_{9(1)}(\text{UNEMPLOYED})_{ij} + \beta_{9(2)}(\text{NEITHER EMPLOYED/UNEMPLOYED})_{ij} + \beta_{10(1)}(\text{RECESSION})_{ij} + \beta_{10(2)}(\text{RECOVERY})_{ij} + \beta_{11(1)}(\text{RURAL})_{ij} + \beta_{12(1)}(\text{RECESSION})_{ij}(\text{OTHER})_{ij} + \beta_{12(2)}(\text{RECOVERY})_{ij}(\text{OTHER})_{ij} + \beta_{12(3)}(\text{RECESSION})_{ij}(\text{AIAN})_{ij} + \beta_{12(4)}(\text{RECOVERY})_{ij}(\text{AIAN})_{ij} + \beta_{12(5)}(\text{RECESSION})_{ij}(\text{ASIAN})_{ij} + \beta_{12(6)}(\text{RECOVERY})_{ij}(\text{ASIAN})_{ij} + \beta_{12(7)}(\text{RECESSION})_{ij}(\text{BLACK})_{ij} + \beta_{12(8)}(\text{RECOVERY})_{ij}(\text{BLACK})_{ij} + \beta_{13}(\text{STATE UNEMPLOYMENT RATE})_i + \beta_{14}(\text{STATE POVERTY RATE})_i + \beta_{15(1)}(\text{GINI-Q1})_i +$

$\beta_{15(2)}(\text{GINI-Q1})_i + \beta_{15(3)}(\text{GINI-Q1})_i + \beta_{16(1)}(\text{GINI-Q1})_i(\text{OTHER})_{ij} + \beta_{16(2)}(\text{GINI-Q2})_i(\text{OTHER})_{ij} + \beta_{16(3)}(\text{GINI-Q3})_i(\text{OTHER})_{ij} + \beta_{16(4)}(\text{GINI-Q1})_i(\text{AIAN})_{ij} + \beta_{16(5)}(\text{GINI-Q2})_i(\text{AIAN})_{ij} + \beta_{16(6)}(\text{GINI-Q3})_i(\text{AIAN})_{ij} + \beta_{16(7)}(\text{GINI-Q1})_i(\text{ASIAN})_{ij} + \beta_{16(8)}(\text{GINI-Q2})_i(\text{ASIAN})_{ij} + \beta_{16(9)}(\text{GINI-Q3})_i(\text{ASIAN})_{ij} + \beta_{16(10)}(\text{GINI-Q1})_i(\text{BLACK})_{ij} + \beta_{16(11)}(\text{GINI-Q2})_i(\text{BLACK})_{ij} + \beta_{16(12)}(\text{GINI-Q3})_i(\text{BLACK})_{ij} + \beta_{17(1)}(\text{PARENTS <100\%FPL})_i + \beta_{18(1)}(\text{PARENTS <100\%FPL})_i(\text{RECESSION})_{ij} + \beta_{18(2)}(\text{PARENTS <100\%FPL})_i(\text{RECOVERY})_{ij}$

$+ \beta_{19(1)}(\text{PARENTS <100\%FPL})_i(\text{OTHER})_{ij} + \beta_{19(2)}(\text{PARENTS <100\%FPL})_i(\text{AIAN})_{ij} + \beta_{19(3)}(\text{PARENTS <100\%FPL})_i(\text{ASIAN})_{ij} + \beta_{19(4)}(\text{PARENTS <100\%FPL})_i(\text{BLACK})_{ij}$

$+\beta_{20(1)}(\text{PARENTS <100\%FPL})_i(\text{RECESSION})_{ij}(\text{OTHER})_{ij}$

$+\beta_{20\,(2)}(\text{PARENTS <100\%FPL})_i(\text{RECOVERY})_{ij}(\text{OTHER})_{ij}$

$+\beta_{20\,(3)}(\text{PARENTS <100\%FPL})_i(\text{RECESSION})_{ij}(\text{AIAN})_{ij}$

$+\beta_{20\,(4)}(\text{PARENTS <100\%FPL})_i(\text{RECOVERY})_{ij}(\text{AIAN})_{ij}$

$+\beta_{20\,(5)}(\text{PARENTS <100\%FPL})_i(\text{RECESSION})_{ij}(\text{ASIAN})_{ij}$

$+\beta_{20\,(6)}(\text{PARENTS <100\%FPL})_i(\text{RECOVERY})_{ij}(\text{ASIAN})_{ij}$

$+\beta_{20\,(7)}(\text{PARENTS <100\%FPL})_i(\text{RECESSION})_{ij}(\text{BLACK})_{ij}$

$+\beta_{20(8)}(\text{PARENTS<100\%FPL})_i(\text{RECOVERY})_{ij}(\text{BLACK})_{ij} + e_{ij}$

When modeling Medicaid Generosity for childless adults β17, β18, β19 & β20 take the following form:

$\beta_{17(1)}\,(\text{CA NO COVERAGE})_i + \beta_{17(2)}\,(\text{CA COVERAGE <133\%FPL})_i +$

$\beta_{18(1)}$ (CA NO COVERAGE)$_i$ (RECESSION)$_{ij}$+ $\beta_{18(2)}$ (CA NO COVERAGE)$_i$ (RECOVERY)$_{ij}$ +

$\beta_{18(3)}$ (CA COVERAGE <133%FPL)$_i$ (RECESSION)$_{ij}$+

$\beta_{18(4)}$ (CA COVERAGE <133%FPL)$_i$ (RECOVERY)$_{ij}$ +

$\beta_{19(1)}$ (CA NO COVERAGE)$_i$ (OTHER)$_{ij}$ + $\beta_{19(2)}$ (CA COVERAGE <133%FPL)$_i$ (OTHER)$_{ij}$ + $\beta_{19(3)}$ (CA NO COVERAGE)$_i$ (AIAN)$_{ij}$ + $\beta_{19(4)}$ (CA COVERAGE <133%FPL)$_i$ (AIAN)$_{ij}$ + $\beta_{19(5)}$ (CA NO COVERAGE)$_i$ (ASIAN)$_{ij}$ + $\beta_{19(6)}$ (CA COVERAGE <133%FPL)$_i$ (ASIAN)$_{ij}$ + $\beta_{19(7)}$ (CA NO COVERAGE)$_i$ (BLACK)$_{ij}$ + $\beta_{19(8)}$ (CA COVERAGE <133%FPL)$_i$ (BLACK)$_{ij}$ + $\beta_{20(1)}$ (CA NO COVERAGE)$_i$ (RECESSION)$_{ij}$ (OTHER)$_{ij}$ +$\beta_{20(1)}$ (CA COVERAGE <133%FPL)$_i$ (RECESSION)$_{ij}$ (OTHER)$_{ij}$ + $\beta_{20(3)}$ (CA NO COVERAGE)$_i$ (RECOVERY)$_{ij}$ (OTHER)$_{ij}$ +

$\beta_{20(4)}$ (CA COVERAGE <133%FPL)$_i$ (RECOVERY)$_{ij}$ (OTHER)$_{ij}$ +

$\beta_{20(5)}$ (CA NO COVERAGE)$_i$(RECESSION)$_{ij}$ (AIAN)$_{ij}$ +

$\beta_{20(6)}$ (CA COVERAGE <133%FPL)$_i$ (RECESSION)$_{ij}$ (AIAN)$_{ij}$ +

$\beta_{20(7)}$ (CA NO COVERAGE)$_i$ (RECOVERY)$_{ij}$ (AIAN)$_{ij}$ +

$\beta_{20(8)}$ (CA COVERAGE <133%FPL)$_i$ (RECOVERY)$_{ij}$ (AIAN)$_{ij}$ +

$\beta_{20(9)}$ (CA NO COVERAGE)$_i$ (RECESSION)$_{ij}$ (ASIAN)$_{ij}$ +

$\beta_{20(10)}$ (CA COVERAGE <133%FPL)$_i$ (RECESSION)$_{ij}$X$_1$(ASIAN)$_{ij}$ +

$\beta_{20(11)}$ (CA NO COVERAGE)$_i$ (RECOVERY)$_{ij}$ (ASIAN)$_{ij}$ +

$\beta_{20(12)}$ (CA COVERAGE <133%FPL)$_i$ (RECOVERY)$_{ij}$ (ASIAN)$_{ij}$ +

$\beta_{20(13)}$ (CA NO COVERAGE)$_i$ (RECESSION)$_{ij}$ (BLACK)$_{ij}$ +

$\beta_{20(14)}$ (CA COVERAGE <133%FPL)$_i$ (RECESSION)$_{ij}$ (BLACK)$_{ij}$ +

$\beta_{20(15)}$ (CA NO COVERAGE)$_i$ (RECOVERY)$_{ij}$ (BLACK)$_{ij}$ +

$\beta_{20(16)}$ (CA COVERAGE <133%FPL)$_i$ (RECOVERY)$_{ij}$ (BLACK)$_{ij}$ +

Interpretation 1: If any Wald test of β_{18} is significant ($p \leq .05$), then we will conclude there is a differential effect for our **outcomes** on **Medicaid Generosity** by **Time-Period**, adjusted for all other terms in the model.

Interpretation 2: If any Wald test of β_{19} is significant ($p \leq .05$), then we will conclude there is a differential effect for our **outcomes** of **Race** over levels of **Medicaid Generosity**, adjusted for all other terms in the model.

Interpretation 3: If any Wald test of β_{20} is significant ($p \leq .05$), then we will conclude there is a differential effect for our **outcomes** of **Race** over levels of **Medicaid Generosity** & **Time-Period**, adjusted for all other terms in the model.

Proposed Papers: Based on Aims 1, 2 and 3

Note: To be completed prior to final defense

Paper 1: Differential effects of the Great Recession among minority populations

Paper 2: State Medicaid Generosity during the Great Recession

Note: To be completed after final defense

Paper 3:If income inequality is associated with higher levels of poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost within the Recession and into the economic recovery; can Medicaid Generosity offset some of this association?

CHAPTER 3

RESEARCH DESIGN

3.1 THEORETICAL MODEL

Access to care is a multifaceted measure that involves several indicators. For the purposes of this study, we will use utilization indicators and health outcome indicators. The study uses a modified version of the Conceptual Framework for Action on the Social Determinants of Health to design our theoretical framework (research questions, variables chosen and statistical analysis) (Solar & Irwin, 2010)[101].

We focus on structural determinants, intermediary determinants and impacts on equity in health and well-being. Structural determinants include public policy, which in our study includes Medicaid Generosity. Structural determinants also include socioeconomic position, social class, gender, ethnicity, education, occupation and income (the current study includes sex, income level, race, education, employment, insurance status and age). Intermediary determinants include material circumstances (rurality, poverty rate and unemployment rate were used in our analysis) and behavioral and biological factors (disability and diabetes status were used in our analysis).

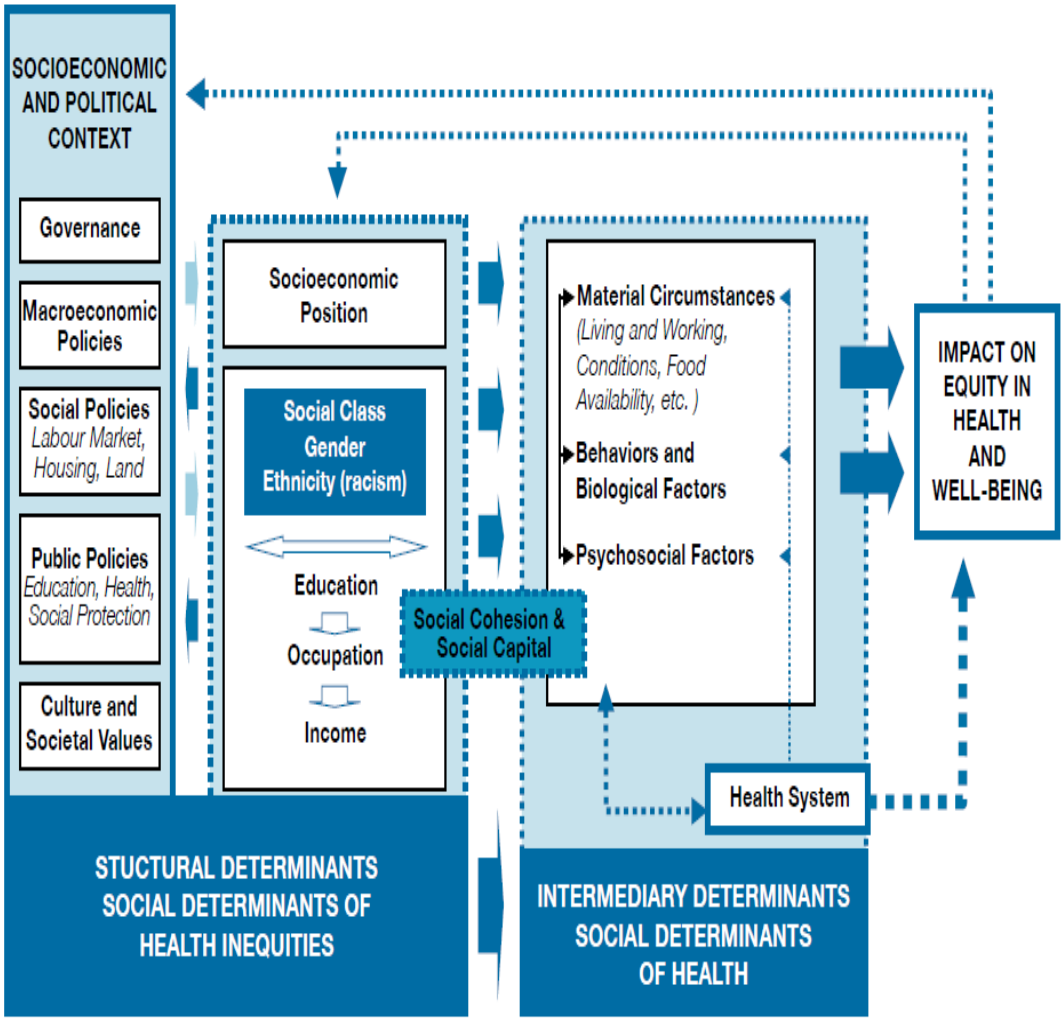

Figure 3.1. Conceptual Framework for Action on the Social Determinants of Health

Source: Solar O, Irwin A. A conceptual framework for action on the social determinants of health. Social Determinants of Health Discussion. Paper 2 (Policy and Practice).

Available at: http://www.who.int/sdhconference/resources/ConceptualframeworkforactiononSDH_eng.pdf (Accessed 10.19.2012).

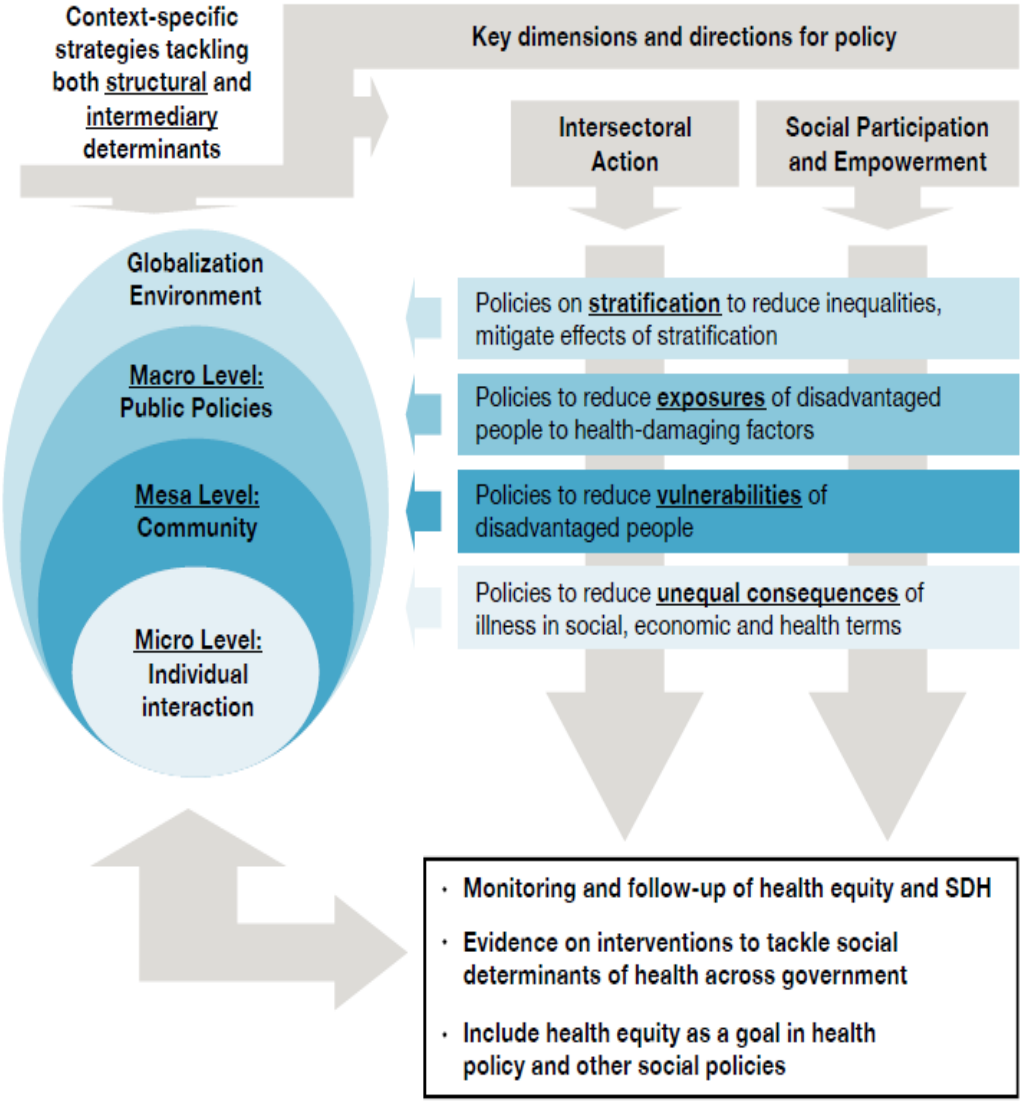

Figure 3.1. Conceptual Framework for Action on the Social Determinants of Health (cont.)

Source: Solar O, Irwin A. A conceptual framework for action on the social determinants of health. Social Determinants of Health Discussion. Paper 2 (Policy and Practice).

Available at: http://www.who.int/sdhconference/resources/ConceptualframeworkforactiononSDH_eng.pdf (Accessed 10.19.2012).

3.2 MODIFIED FRAMEWORK FOR THE CURRENT STUDY

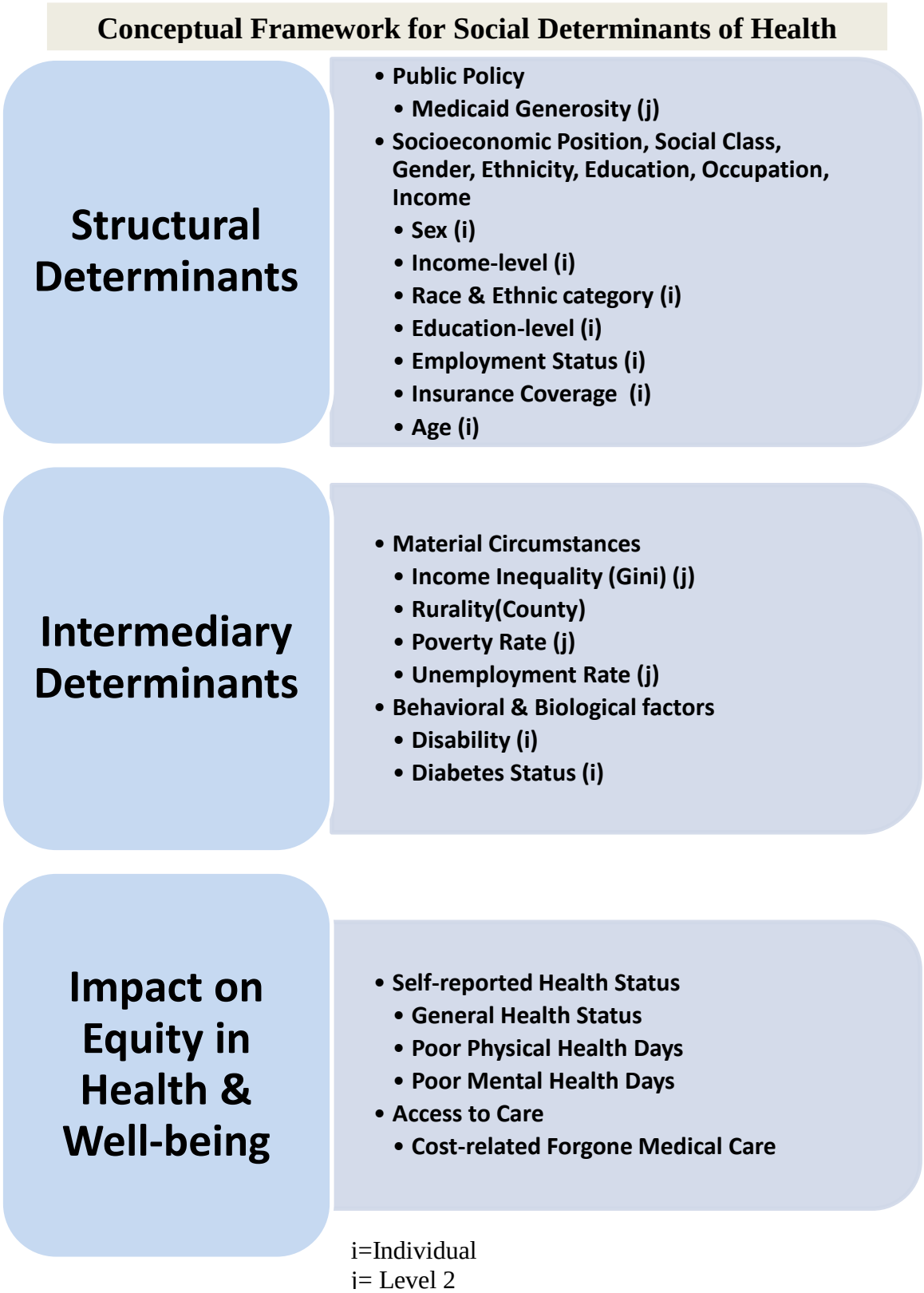

Figure 3.2. Modified Framework for the current Study.

Multi-level Theoretical Implications

Failing to incorporate an individual's surroundings in an analysis that seeks to identify factors contributing to health outcomes may bias results due to model misspecification or contextual fallacies (Ployhart, 2007)[102]. Multi-level analysis allows researchers to gain a fuller perspective on some phenomena (Bliese, p373, 2000)[103]. In addition, identifying possible cross-level interactions allows researchers to identify what higher-level variables may influence variables at the individual level (Raudenbush, 2002)[104]. Simply put, failure to realize a major moderator at the higher level (i.e. state-level or county-level), may lead to decisions based on less than a complete picture. Multi-level analysis is an appropriate method to answer the questions presented in this proposal.

Our analysis adjusts for spatiotemporally clustered events (separated into three periods, pre-Recession, Recession & Recovery) and across seven years of study. Identifying potential sources for clusters of events is a common theme in epidemiological investigations (Cromley, 2002)[105]. However, we include potential environmental/contextual factors for their potential moderating effect on the outcomes of interest. This approach allows us to assess questions such that we account for the non-independent nature of individuals nested in groups (Diez Roux, 2002). In addition, we have included several years of observation leading up to the Recession in an attempt to improve our 'inferential power' regarding our conclusions (Shadish et al., p. 484, 2002)[106].

State-level policies are contextual variables that may change over time and across states. Variations in state Medicaid Generosity vary by both time and location (Ferguson

et al., 2009). Incorporating the similarities within states and potential differences across states allows for an analysis that may identify state-level influences on individuals health outcomes within states (Sommers et al., 2012).

Using several relevant measures of SES can improve measurement in studies concerning racial and ethnic differences in populations (Braveman et al. 2005). Measures of income inequality have been used in multi-level analysis using the Behavioral Risk Factor Surveillance System (data from 2000) when assessing measures of health status (Diez-Roux, 2000)[107] and health insurance status (Chen et al., 2012)[108]. Gini coefficients have been used to distinguish levels of income disparity or unevenness (Fosu, 2010)[109].

Our inclusion of measures of SES (Williams, 1999)[110], at multiple levels (i.e. at the individual and community-level) is supported by methodological suggestions in the literature (Krieger et al., p. 347, 1997)[111]; (Braveman et al., p. 2885, 2005).

Rurality also can lead to differences in health status. Including rurality as a measure when studying health-related outcomes can allow for a more accurate assessment of the level of disparities across a wide range of health-related indicators (Norton, 1989); (Probst et al., 2011)[112]. Those living in rural areas may experience greater economic risks related to economic downturns.

3.3 STUDY DESIGN

The submitted research will use multiple years of observational information collected at yearly intervals to study effects of the Recession across working age adults in different racial/ethnic groups and different demographic settings within states.

We analyze estimates for race and ethnic groups from 2004 – 2010 using logistic regression random coefficient models. Our data structure includes individuals nested within geographic spaces, and assumes that individuals in the same geographic region share similar characteristics due to their relative proximity (i.e. non-independent samples).

3.4 POPULATION

The focus population are all non-institutionalized adults aged 18-64 living in the United States between the years 2004-2010. These individuals are working-aged adults most likely to suffer economic pressures related to employment.

3.5 DATA SOURCES

Brief Background & Use

Options for using the BRFSS in multi-level analysis have been replicated in the literature. For example, using information from the state and individual-levels to conduct state policy analysis may be appropriate (McCarrier et al., 2011)[113].

Data from the BRFSS have been used in analysis that incorporates the nested structure of individuals in higher-level units (i.e. counties and states). We will use similar analyses as those used by Kim et al. (2006), Pruitt & Schootman (2010) and Schootman et al (2007); however, we will restrict our county-level information to fixed effects measured at the individual level and allow our states intercepts to vary as our higher level. Restricting samples to those with adequate sample sizes at the county-level limits

the generalizability of our analysis (Schootman et al. 2007); (Pruitt & Schootman (2010); (Kim et al., 2006).

Kim et al (2006)[114] used the BRFSS data to conduct a three-level analysis that includes individuals nested within counties nested within states. In this study the BRFSS data are merged with multiple datasets and both state and county-level variables are measured for their relationship with individual-level outcomes including obesity and physical activity (Kim et al., 2006).

Jia et al (2009)[115] used the BRFSS data to conduct a two-level analysis of health-related quality of life. Information from the Area Resource File and other county-level datasets was used in this analysis (Jia et al., 2009). Here the authors "specified the sampling strata and primary sampling unit in the model variance-covariance matrix" to "account for the complex sampling design" of the BRFSS using SAS software (Jia et al, 432, 2009). The probability weight and post-stratification weight were included in this multi-level analysis (Jia, et al., p. 432, 2009). Jia et al. (2009) also examined the use of a three-level model that incorporated individuals nested within counties, nested within states. They report that the three-level model showed no substantial benefit over the two-level model, when using comparisons of goodness-of-fit (Jia et al., p. 433, 2009).

Pruitt & Schootman (2010)[116] used the BRFSS to conduct a three-level analysis of individuals nested within counties nested within states, using measures of poverty at the state and county-level studying human papillomavirus vaccination in children (aged 13-17). The authors of this study used county and state-level variables from the US Census with three-level random intercept logistic regression models using second-order

penalized quasi-likelihood estimation (Pruitt & Schootman, p. 526-527, 2010). The authors used the individual-level weights from the BRFSS, and constructed weights at the county-level using the "ratio of the number of female individuals aged 13-17 years to the total population of the county," and constructed weights at the state-level using the "sum of those ratios for all included counties in the state" (Pruitt, p. 527, 2010).

Schootman et al (2007)[117] used the BRFSS to conduct a three-level analysis (individual, county and state) incorporating second-order Taylor Series to study breast cancer screening and incidence. Fan et al (2011)[118] used the BRFSS to conduct three-level analysis including individuals nested within sampling strata nested within states to study current depression among US adults. Fan et al (2011) used the sampling strata as the second-level within states to "account for the sampling stratum level factors relevant to the outcomes" (Fan et al., p. 464, 2011). Fan et al (211) also used the Gini Index from the 2000 Census.

Current Study

The Behavioral Risk Factor Surveillance System (BRFSS) is an annual telephone health survey that obtains information on a variety of health topics including perceived health status, employment status and income-level across the US. The BRFSS was established by the Centers for Disease Control and Prevention (CDC) and data are publicly available on the CDC's website [119](Centers for Disease Control and Prevention, 2010). The BRFSS is used as a tool to conduct evaluations of public health programs and policies to improve the quality of life of US residents (Li et al., 2011)[120]. The unit of observation in the BRFSS is the individual adult. Information collected (for the same

modules) is variable across time and location for the majority of the measured variables (Ruhm, p. 4, 2005). We use only Core Questions in our analysis and not State-Added or Optional Modules to improve comparability across years and states.

The data are weighted for the complex sampling design of the BRFSS. We incorporate this information included in the post-stratification process to adjust for the complex sampling frame. Information used to create the sampling weight is available in the public use file (see Table 3.1). Our analysis includes our utilization of weights across different data collection points. Given that the sampling plan can change across time, we compare weighted and unweighted analyses to determine whether our results are sensitive to the treatment of survey weights (see Appendix D).

Information regarding the sampling frame, items and other information concerning the questionnaire can be found on the CDC's Web resource (http://www.cdc.gov/brfss/technical_infodata/surveydata.htm). The CDC restricts the public use file to exclude counties with less than 50 observations and fewer than or equal to 10,000 adults (CDC, p. 3, 2010)[121] The CDC's online documentation the *Comparability of Data: BRFSS 2010* indicates that data may be combined for two or more years and that the use of synthetic estimates created through extrapolation of data from the state-level may be used to compensate for insufficient sample sizes at the county-level (CDC, 2010). The BRFSS questionnaire items have been shown to be both reliable and valid in almost all instances (Nelson et al., 2001)[122]. More specifically, measures of retest reliability were 0.75 or higher for measures of Self-Reported Health and Healthy Days (Andresen et al., 2003)[123]. We will use BRFSS data collected from the years 2004-2010.

Table 3.1. BRFSS Weighting Variables included in the Public Use File (2004-2010)

_STSTR	Sample Design Stratification Variable (A five digit number that combines the values for _STATE (first two characters), _GEOSTR (third and fourth character), and _DENSTR2 (final character).)
_STRWT	Stratum weight (Number of records in a stratum (NRECSTR) divided by the number of records selected (NRECSEL).)
_RAW	Raw weighting factor (Number of adults in the household (NUMADULT) divided by the imputed number of phones (_IMPNPH).)
_WT2	Design weight (Stratum weight (_STRWT) multiplied by the raw weighting factor (_RAW).)
_POSTSTR	Post-stratification weight (Population estimate for race/sex/age categories divided by the weighted sample frequency by race/sex/age.)
_FINALWT	Final weight assigned to each respondent (Post-stratification weight (_POSTSTR) multiplied by design weight (_WT2).)
_REGION	Geographic region within a state, imputed from CTYCODE, _IMPCTY, or _GEOSTR
AGEG	Age groups used in post-stratification (_AGEG_ is calculated by _REGION. For states using more than one _REGION, there could be more than one response for a given _AGEG_ value.)
SEXG	Sex categories used in post-stratification (_SEXG_ is calculated by _REGION. For states using more than one _REGION, there could be more than one response for a given _SEXG_ value.)
RACEG3	Post-stratification race group codes used in weighting (_RACEG3_ is calculated by _REGION. For states using more than one _REGION, there could be more than one response for a given _RACEG3_ value.)
_IMPAGE	Imputed age used in post-stratification (This value is the reported age or an imputed age, if the respondent refused to give an age. The value of the imputed age will be an average age computed from the sample if the respondent refused to give an age.)
_IMPNPH	Imputed number of phones used in weighting

The data include a nationally representable sample of the non-institutionalized US population participating through the BRFSS, which is a random sample of residents with a landline telephone for the years 2004-2010.

All information is publicly available and de-identified at the individual-level. The base number of observations for each year under study are 303,822 for 2004; 356,112 for 2005; 355,710 for 2006; 430,912 for 2007; 414,509 for 2008; 432,607 for 2009; and 451,075 for 2010 (Centers for Disease Control and Prevention, 2000-2011)[124]. Restricting the samples to those aged 18 – 64 reduced our sample sizes to 255,461 for 2010; 255,943 for 2009; 252,903 for 2008; 266,340 for 2007; 226,517 for 2006; 232,524 for 2005; and 204,053 for 2004.

In addition, we further restricted the sample to observations with no missing values for race/ethnicity, and collapsed Native Hawaiians or Pacific Islanders (ranging from 563 in 2004 to 1,785 in 2009) and those with no preference for race/ethnicity (ranging from 355 in 2004 to 734 in 2010) into Other. Finally, we removed observations with missing county identifiers and missing information for our control variables. Our preliminary sample size totaled 1,886,146 adults from 2004-2010 (see Table 3.1) before considering the availability of our outcomes. Tables 3.3-3.6 provide the number of observations present with each of our outcomes.

Exclusion of observations is a result of the ability to measure our outcomes (i.e. observations reporting outcomes under study) and include relevant information in our models (i.e. variables specified in analysis). Missing information or reporting *don't know* or *not sure* is treated as missing and excluded from analysis unless otherwise specified

(i.e. **Income Level** includes a *missing* category into analysis due to the relatively high number of adults with missing information) for variables. Detailed information on missing information (i.e. percent missing) is available in BRFSS data documentation. Exclusion of non-working age adults fits the study of Recession effects on working age adults and the study of Medicaid Eligibility. Demographic information on excluded non-working age adults is not provided as this population is not the focus of this study.

3.6 VARIABLES TO BE STUDIED

Individual Independent Variables

Race and ethnicity categories are included in our analyses as an independent variable at the individual-level taken from the BRFSS. Categories include: **AIAN**, **White**, **Black**, **Asian**, and **Other** with varying sample sizes for each year under study (See Table 3.2). In our analysis, respondents preferred race category is coded as White, Black or African American, Asian, American Indian or Alaska Native, & Other. The category **Other** refers to individuals that report Other, No preferred race, multiracial but preferred race not asked and Native Hawaiian or other Pacific Islander. The density for this variable among working-age adults is as follows: White 10,292 (Hawaii) – 76,708 (Washington); Black 61 (Montana) – 10,823 (North Carolina); Asian 60 (West Virginia) – 8,629 (Hawaii); AIAN 79 (Iowa) – 2,947 (Oklahoma); Other 72 (West Virginia) – 4,341 (Massachusetts).

Table 3.2. Sample sizes by year and Race & Ethnicity category (after removing missing observations for individual-level controls).

Year	2004	2005	2006	2007	2008	2009	2010	Total
Race								
White	185,395	213,013	207,766	242,618	231,761	233,298	237,653	155,1504
Black	22,308	23,745	24,025	26,588	26,051	26,676	27,786	177,179
Asian	2,943	5,303	5,003	5,696	5,749	6,298	6,537	37,529
AIAN	4,718	5,669	5,117	5,978	5,599	5,769	5,993	38,843
Other	9,119	11,821	12,824	14,665	13,013	10,785	8,864	81,091
Total	224,483	259,551	254,735	295,545	282,173	282,826	286,833	1,886,146

Table 3.3. Sample sizes by year and Race & Ethnicity category (after removing missing observations for individual-level controls and General Health Status).

Year	2004	2005	2006	2007	2008	2009	2010	Total
Race								
White	185,074	212,598	207,285	241,912	231,114	232,434	23,7130	1,547,547
Black	22,229	23,665	23,942	26,471	25,925	26,510	27,676	176,418
Asian	2,937	5,287	4,991	5,671	5,734	6,266	6,517	37,403
AIAN	4,702	5,651	5,095	5,950	5,567	5,744	5,972	38,681
Other	9,072	11,780	12,771	14,587	12,962	10,736	8,842	80,750
Total	224,014	258,981	254,084	294,591	281,302	281,690	286,137	1,880,799

Table 3.4. Sample sizes by year and Race & Ethnicity category (after removing missing observations for individual-level controls and Physical Healthy Days).

Year	2004	2005	2006	2007	2008	2009	2010	Total
Race								
White	183,592	210,739	205,727	240,112	229,590	231,083	234,722	1,535,565
Black	21,880	23,251	23,530	26,008	25,551	2,6175	27,100	173,495
Asian	2,902	5,228	4,924	5,635	5,680	6,228	6,433	37,030
AIAN	4,633	5,554	5,023	5,832	5,484	5,670	5,864	38,060
Other	8,962	11,616	12,615	14,445	12,801	10,602	8,673	79,714
Total	221,969	256,388	251,819	29,2032	279,106	279,758	282,792	1,863,864

Table 3.5. Sample sizes by year and Race & Ethnicity category (after removing missing observations for individual-level controls and Mental Healthy Days).

Year	2004	2005	2006	2007	2008	2009	2010	Total
Race								
White	183,272	210,497	205,380	239,899	229,401	230,943	234,692	1,534,084
Black	21,971	23,381	23,634	26,156	25,703	26,279	27,314	174,438
Asian	2,906	5,229	4,936	5,634	5,687	6,231	6,463	37,086
AIAN	4,634	5,564	5,016	5,848	5,488	5,674	5,884	38,108
Other	8,954	11,592	12,586	14,424	12,840	10,609	8,675	79,680
Total	221,737	256,263	251,552	291,961	279,119	279,736	283,028	1,863,396

Table 3.6. Sample sizes by year and Race & Ethnicity category (after removing missing observations for individual-level controls and Forgone Medical Care due to Cost).

Year	2004	2005	2006	2007	2008	2009	2010	Total
Race								
White	185,160	212,714	207,456	242,279	231,426	233,015	237,286	1,549,336
Black	22,273	23,695	23,965	26,521	25,993	26,618	27,701	176,766
Asian	2,923	5,289	4,984	5,674	5,725	6,282	6,510	37,387
AIAN	4,713	5,652	5,100	5,953	5,586	5,754	5,972	38,730
Other	9,088	11,790	12,794	14,622	12,967	10,755	8,837	80,853
Total	224,157	259,140	254,299	295,049	281,697	282,424	286,306	1,883,072

Contextual Independent Variables

To measure the comparability of areas for our policy related analysis (i.e. Medicaid Generosity) we used state characteristics.

Using contextual variables to measure differences in individual-level outcomes provides significant relationships for individuals on contextual variables. This has been shown using Gini coefficients with regard to individual mortality (National Health Interview Survey, 1987-1994); (Lochner et al., 2001)[125]. BRFSS data (1993-1994) has been used to assess individual-level variation in self-rated health with state-level socio-economic contextual variables (Subramania et al., 2001)[126]. Furthermore, additional evidence suggests that income inequality is associated with self-reported poor or fair health even after controlling for individuals' household income using BRFSS data (years used included 1993-1994) (Kennedy et al., 1998)[127]. Here, the authors found evidence that using Gini Coefficients as a categorical (4-level) variable allowed for greater interpretation of the findings in a more meaningful way that a wider audience would understand.

We use Gini Coefficients provided from the US Census Bureau for the year 2009. These measures are invariant within states, but vary between states. Any given state has one Gini Coefficient assigned to it, and this measure is used at the state-level in our models. Gini Coefficients were separated into quartiles: Q1: ≤ 0.439, Q2: > 0.439 & ≤ 0.453, Q3: > 0.453 & ≤ 0.467, Q4: > 0.467 (using 2009 Gini Coefficients). Gini's at zero are a measure of equality in the income of the population, while a Gini of 1.0 represents

complete income inequality (Subramania et al., 2001). Gini coefficients can be defined as:

'half of the arithmetic average of the absolute differences between all pairs of incomes in a population, the total then being normalized on mean income' (Subramanian & Kawachi, p78, 2004)[128].

The following formula is taken directly from the US Census website: http://www.census.gov/hhes/www/income/publications/ACS%20inequality%20report%202000-2005_v2.pdf based on a working paper *Household Income Inequality Measures Based on the ACS Data: 2000-2005* by John J. Hisnuanick & Annette L. Rogers.

$$G = 2 / \upsilon m^2 \sum_{i=1}^{n} iX_i \frac{n+1}{n}$$

Diez-Roux et al. (2000) uses both a two-level model (individual-level and state-level) a three-level model specification (individual-level, clustering at the telephone prefixes and clustering at the state-level) using a nationwide sample (including 44 states) of non-institutionalized adults (aged 18 and older) to identify whether income inequality was associated with individual cardiovascular risk factors. Results indicated that differences between the three-level model and the two-level model were "virtually identical" and the authors concluded reporting results from the simpler two-level model (Diez-Roux et al., p. 678, 2000).

Variation in Medicaid programs across states for Medicaid eligibility as a percent of the Federal Poverty Level (FPL) and variation in reporting methods limits consistency

when identifying each state's Medicaid policies for each year under study. As such, our independent variable of Medicaid Generosity is provided based on the resources available at the time of this study. Sources for this measure are provided in Appendix B. The primary source of information referring to childless adults is taken from 2007 Medicaid Analytical eXtract (MAX) data reported for nine of 16 states using Section 1115 waivers (Natoli, p. 2, 2011). These states include Arizona, Delaware, the District of Columbia, Maine, Michigan, Oklahoma, Oregon, Utah, Vermont with additional states including Arkansas, Hawaii (1115 Details for Hawaii, 2013)[129], Iowa (1115 Details for Iowa, 2013)[130], Maryland (1115 Details for Maryland, 2013)[131], Massachusetts, New Mexico (1115 Details for New Mexico, 2013)[132], and New York (1115 Details for New York, 2013).[133] Our analysis focuses on states with eligibility (defined by percent of Federal Poverty Levels for one's income) extended regardless of employment status or disease status. The District of Columbia was excluded from our analysis for childless adults due to narrow age restrictions (i.e. 50-64 years of age for eligibility) (Artiga & Schwartz, 2009)[134]. Arkansas was excluded from our analysis due to the employment related requirement for eligibility (Artiga & Schwartz, p. 12, 2009). Massachusetts was excluded due to restrictions for being long-term unemployed (1115 Details for Massachusetts, 2013)[135]. Additional sources were used to pull further information for childless adults (Somers et al., p. 13, 2010)[136].

Medicaid eligibility levels for adults without dependent children are used to assess whether differences exist both within and between states for the decision to implement a more generous eligibility criteria. We also include Medicaid eligibility levels for parents of dependent children.

Operational definitions of Medicaid Generosity are separated into two completely separate measures which are used in equations measuring the generosity of parents and childless adults separately (i.e. the equations for Medicaid Generosity has only a measure for parents or childless adults, these are never combined in the same model).

1. Childless adults or adults without dependent children
    a. No coverage for Adults
    b. Coverage for adults with eligibility defined as ≥133% of the FPL (note: 100% FPL is ≥ the upper quartile for 2004-2009)
    c. Coverage for adults with eligibility defined as < 133% of the FPL
2. Parents of dependent children
    a. Coverage eligibility defined as ≥ the upper quartile based on each year of data (calculated separately for working parents and non-working parents for 2004, 2005, 2006, 2007 has missing data on generosity for parents, 2008 & 2009; calculated with no separation for working status for 2010)
    b. Coverage eligibility defined as < the upper quartile based on each year of data (calculated separately for working parents and non-working parents for 2004, 2005, 2006, 2007 has missing data on generosity for parents, 2008 & 2009; calculated with no separation for working status for 2010)

Dependent Variables

Our primary outcomes include (2004-2010): Self-reports: **General Health Status** (Fair or Poor versus Good; Very Good or Excellent) (CDC, 2008)[137]; **Poor Physical**

Health Days (number of days (during the past 30 days) when physical health was not good); **Poor Mental Health Days** (number of days (during the past 30 days) when mental health was not good) (CDC, 2000)[138]; **Cost-related Forgone Medical care** (Time in the past 12 months when one needed to see a doctor but could not because of cost) (Blum et al., 2012)[139].

Self-reported **General Health Status** was specified as poor or fair (0) versus good, very good or excellent (1). **Poor Physical Health Days** was specified as one or more poor health days (1) versus none (0). **Poor Mental Health Days** was specified as one or more poor mental health days (1) versus none (0). We specified forgone **Cost-related Forgone Medical care** as yes (0) or no (1) (see Table 3.8).

Moderating Factors

Moderating factors include income inequality (measured through Gini coefficients). We will also include Medicaid Generosity (differences in eligibility defined as the Percent of Federal Poverty for parents and childless adults) at the state-level as our state policy-level analysis. Here, we will identify areas with differing Medicaid coverage to measure differences in the utilization and outcomes across time.

We include cross-level effects in the form of 'cross level effect modification' to assess the effects of state and county contextual factors on the relationship between our outcomes of interest (self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost) on race and ethnicity.

Individual Level Control Variables

All individual-level covariates are coded with meaningful zeros (except age). Age is grand mean centered at level-one, as we are interested in the effect of a higher-level factor on an individual-level variable (Enders & Tofighi, 2007)[140]. In addition, this allows more direct comparisons of effect sizes. Hofmann & Gavin (1998)[141] provide a detailed explanation of interpreting grand-mean centered results in analysis using multi-level models.

Insurance status is included (2005 BRFSS codebook: "Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare") to assess differences across insurance status. Having no health insurance is coded as zero.

Income was coded as annual household income from all sources: Less than $15,000; $15,000 (coded as zero) to less than $25,000; $25,000 to less than $35,000; $35,000 to less than $50,000; $50,000 or more; and Don't know/Not sure/Missing (this level was excluded from analysis).

Individual age is a continuous variable (as reported in the BRFSS survey). We included aged 18-64 in our analysis. This is grand mean centered, where the average for working-aged adults is approximately 45.71, which is used to grand mean center the variable AGE.

Education was measured as Did not graduate High School (coded as zero); Graduated High School; Attended College or Technical School; or Graduated from College or Technical School.

Employment status was measured as Employed (Employed for wages; Self-employed); Unemployed (Out of work for more than 1 year; Out of work for less than 1 year) coded as zero; Other (a homemaker; a student; Retired; Unable to work).

We included disability and diabetes status into our analysis. This reduces the effect of confounding due to the link between disease/disability status and race [142] (LeCook et al., p. 1240, 2012). We also collapsed the responses for the variables disability and diabetes into binary outcomes. For diabetes, we collapsed the outcomes of the following answers into No: *Yes, but female told only during pregnancy*; *No*; and *No, pre-diabetes or borderline diabetes*. In addition, we excluded those responses for the following: *Don't know/Not Sure; refused; Not asked or missing*. For disability we collapsed the responses into *Yes* versus *No* (*Not disabled*), while removing responses for *Refused* and *Don't know/Not sure*.

Contextual Control Variables

The poverty rate by race/ethnicity, measured at the state-level (2010-2011) is included to improve comparisons across states. This measure is taken from the Urban Institute and Kaiser Commission on Medicaid and the Uninsured, which are derived from the Current Population Survey (2010 & 2011) (US Census Bureau, 2010-2011)[143]; (Urban Institute and Kaiser Commission on Medicaid and the Uninsured, 2012)[144]. The unemployment rate for states for 2004 - 2010 is included, which are derived from the Bureau of Labor Statistics Local Area Unemployment Rates for states (BLS (f), 2012)[145]. This is measured at the state-level.

The BRFSS lacks information on metropolitan status in the 2004 public use file. Our measure of rurality came from the Area Resource File (ARF). The ARF (2011-2012)

was developed by the Health Resources and Services Administration. It includes county-level data for a variety of areas including health and demographic information (Area Resource File, 2012)[146]. The ARF has been used for its contextual variables at the county-level and linked to health interview surveys, including the BRFSS in past research (Schneider et al., 2009)[147]. We use the Urban Influence Code from the ARF to measure rurality in our models.

We used county-level information (rurality) for the contextual analysis. Rurality will be identified at the individual-level from county identifiers federal information processing standards codes (FIPS Codes) which separate rural and urban subgroups within race/ethnicity. However, while this is measured at the individual–level it is a contextual measure. Urban Influence Codes (UICs) available in the ARF is used to identify rural/urban sub-groups (see Table 3.9). We treat this as a fixed effect at the person-level as this classification is the same for any individual within each county and does not vary within the county. We also include missing rurality as a level of rurality to reduce the effects of missing rural indicators.

3.7 ANALYTICAL APPROACH

We used individual level outcomes to regress on the categorical race and ethnicity. Our data are nested with levels (i.e. individuals nested within counties nested within states), the need to utilize multi-level models for analysis fits the foundation of multi-level theory (observations nested within units). Significance tests will be conducted to determine whether there is evidence to suggest a lack of independence (ICC > 0) within states.

We will use SAS 9.3 (SAS Institute Inc., Cary, North Carolina), and Stata version 12.1 (StataCorp LP, College Station, Texas) for statistical analysis.

SAS software is used for data management and for analysis of unweighted estimation of our generalized linear mixed models (using the GLIMMIX procedure). Do to the computationally intense nature of these models we specify a number of options to improve computational efficiency. The covariance structure specification used is the variance covariance structure (type=vc), as compared to the unstructured covariance structure (type=un), which is not utilized due to the presence of only one random effect & to improve computation time, while yielding comparable models (Kiernan, et al.)[148] We also use the pseudo maximum likelihood estimation method (method=mspl) as opposed to the default restricted maximum (method=rspl) for two reasons (SAS Documentation, Available at: http://support.sas.com/documentation/cdl/en/statug/63033/HTML/default/viewer.htm#statug_glimmix_a0000001459.htm). The pseudo maximum likelihood is computationally more efficient and the overall chi square test can be used to compare model fit between models with differences in the fixed effects (Hox, p. 41, 2010)[149]. Here, we use

Stata software, specifically estimates generalized linear, latent and mixed models (GLLAMM) models, utilizes adaptive quadrature with both 8 and 16 quadrature points to evaluate integrals representing the underlying log-likelihood (Carle, 2009) [150]. Repeated estimation using different numbers of quadrature points can establish consistency in the estimates obtained (Carle, 2009). Full pseudo maximum likelihood is used with GLLAMM (Carle, 2009).

Bivariate analysis measures the raw relationships between race/ethnicity and our outcomes of interest. Multi-Level Logistic Regression assesses the likelihood of these outcomes. Odds ratios measure significant differences between race/ethnicity categories. Following this crude model is an analysis based on a fully adjusted model.

We use Multi-Level Regression to assess these outcomes. The choice of our covariance matrix is based on the nature of the correlations within our states among individuals. We do not assume clusters are equally correlated across states for our outcomes (exchangeable covariance matrix), nor do we assume there is no correlation between responses within states (independent covariance matrix) (Barnett et al., p. 16, 2010)[151]. Unstructured covariance matrices will be specified in our analysis, as our outcomes have a more complex correlation than both exchangeable and independent covariance matrixes.

Individual-level control variable selection is supported through our fixed effects analysis and theory from the literature. These included race/ethnicity; income, age, disability & disease status, insurance status, employment status, sex and education.

Intraclass Correlation Coefficient (ICC)

The ICC is the proportion of the variance explained by the inclusion into some group or population, or the proportion that is explained 'between-groups' (O'Connell, & McCoach, 2008)[152]; (Raudenbush and Bryk, 2002).

ICC Calculation (O'Connell, & McCoach, 2008) for binary outcomes

$$ICC = \frac{\tau_{00}}{\tau_{00} + 3.29}$$

Testable Hypothesis

Aim 1: To measure whether the Recession and subsequent recovery (as compared to the pre-Recession time period) have differential effects on general health status, poor mental and physical health days, and cost-related forgone medical care among vulnerable populations of working-age adults, defined as non-white racial/ethnic subgroups.

Hypothesis 1A: Among working age adults, poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost will be higher during the years 2008 – 2009 than during the years 2004 – 2007. The main effects include Time Period (2004-2007 for the Pre-Recession, 2008-2009 for the Recession and 2010 for the Recovery/Post-Recession, with the referent group identified as the pre-Recession years (2004-2007).

Model 1A: Fully Adjusted Model: Random Intercept Only with Level 1 Predictors & Level 2 Predictors

Level-1 (Fixed Effects) Race, Sex, Income-level, Education-level, Disability, Diabetes, Insurance, Age, Employment, Time-Period, Rurality

Level-2 Poverty Rates, Unemployment Rates, with Random Level-2 State Intercept.

Hypothesis 1A Main Effects of interest: Time-Period

Equation 1:

$$Y_{ij}=\beta_0+\beta_{1(1)}X_{1(OTHER)ij}+\beta_{1(2)}X_{1(AIAN)ij}+\beta_{1(3)}X_{1(ASIAN)ij}+\beta_{1(4)}X_{1(BLACK)ij}+\beta_{2(1)}X_{2(MALE)ij}$$
$$+\beta_{3(1)}X_{3(DK/NS/M)ij}+\beta_{3(2)}X_{3(<15k)ij}+\beta_{3(3)}X_{3(15k25k)ij}+\beta_{3(4)}X_{3(25k35k)ij}+\beta_{3(5)}X_{3(35k50k)ij}+\beta_{4(1)}X_{4(SOME.HS)ij}+\beta_{4(2)}X_{4(HS.GRAD)ij}+\beta_{4(3)}X_{4(SOME.COLLEGE)ij}+\beta_{5(1)}X_{5(DISABLED)ij}+\beta_{6(1)}X_{6(DIABETES)ij}+$$

$\beta_{7(1)}X_{7(\text{NO INSURANCE})ij} + \beta_8X_{8ij} + \beta_{9(1)}X_{9(\text{UNEMPLOYED})ij} + \beta_{9(2)}X_{9(\text{NEITHER EMPLOYED/UNEMPLOYED})ij} + \beta_{10(1)}X_{10(\text{RECESSION})ij} + \beta_{10(2)}X_{10(\text{RECOVERY})ij} + \beta_{11(1)}X_{11(\text{RURAL})ij} + \beta_{12}X_{12i} + \beta_{13}X_{13i} + e_{ij}$

Where (Note: all definitions are adjusted for all other terms in the model),

Y_{ij} is the outcome for the *i*ith individual in the *j*th state

β_0 is the intercept, which is the overall average for our outcome

$\beta_{1(1)}X_{1(\text{Other})ij}+\beta_{1(2)}X_{1(\text{AIAN})ij}+\beta_{1(3)}X_{1(\text{Asian})ij}+\beta_{1(4)}X_{1(\text{Black})ij}$ is the linear combination of the indicators for race categories and the associated coefficients

$\beta_{2(1)}X_{2(\text{Male})ij}$ is the linear combination of the indicators for sex categories and the associated coefficients

$\beta_{3(1)}X_{3(\text{DK/NS/M})ij}+\beta_{3(2)}X_{3(<15k)ij}+\beta_{3(3)}X_{3(15k25k)ij}+\beta_{3(4)}X_{3(25k35k)ij}+\beta_{3(5)}X_{3(35k50k)ij}$ is the linear combination of the indicators for income categories and the associated coefficients

$\beta_{4(1)}X_{4(\text{SOME.HS})ij}+\beta_{4(2)}X_{4(\text{HS.GRAD})ij} +\beta_{4(3)}X_{4(\text{SOME.COLLEGE})ij}$ is the linear combination of the indicators for education categories and the associated coefficients

$\beta_{5(1)}X_{5(\text{DISABLED})ij}$ is the linear combination of the indicators for disability categories and the associated coefficients

$\beta_{6(1)}X_{6(\text{DIABETES})ij}$ is the linear combination of the indicators for diabetes categories and the associated coefficients

$\beta_{7(1)}X_{7(\text{NO INSURANCE})ij}$ is the linear combination of the indicators for insurance categories and the associated coefficients

β_8X_{8ij} is the linear combination of the indicators for age and the associated coefficients

$\beta_{9(1)}X_{9(\text{UNEMPLOYED})ij} + \beta_{9(2)}X_{9(\text{NEITHER EMPLOYED/UNEMPLOYED})ij}$ is the linear combination of the indicators for employment categories and the associated coefficients

$\beta_{10(1)}X_{10(\text{RECESSION})ij} + \beta_{10(2)}X_{10(\text{RECOVERY})ij}$ is the linear combination of the indicators for time categories and the associated coefficients

$\beta_{11(1)}X_{11(\text{RURAL})ij}$ is the linear combination of the indicators for rural categories and the associated coefficients

$\beta_{12}X_{12i}$ is the linear combination of the indicators for continuous state-level unemployment rate and the associated coefficients, which is constant over each state, but varies across states

$\beta_{13}X_{13i}$ is the linear combination of the indicators for continuous state-level poverty rate and the associated coefficients, which is constant over each state, but varies across states

e_{ij} is the error term for the *i*th individual in the *j*th state

Equation 1: $Y_{ij} = \beta_0 + \beta_{1(1)}(\text{OTHER})_{ij} + \beta_{1(2)}(\text{AIAN})_{ij} + \beta_{1(3)}(\text{ASIAN})_{ij} + \beta_{1(4)}(\text{BLACK})_{ij} + \beta_{2(1)}(\text{MALE})_{ij} + \beta_{3(1)}(\text{Don't Know/Not Sure/Missing})_{ij} + \beta_{3(2)}(<15\text{k})_{ij} + \beta_{3(3)}(15\text{k-}25\text{k})_{ij} + \beta_{3(4)}(25\text{k-}35\text{k})_{ij} + \beta_{3(5)}(35\text{k-}50\text{k})_{ij} + \beta_{4(1)}(\text{SOME HS})_{ij} + \beta_{4(2)}(\text{HS GRAD})_{ij} + \beta_{4(3)}(\text{SOME COLLEGE})_{ij} + \beta_{5(1)}(\text{DISABLED})_{ij} + \beta_{6(1)}(\text{DIABETES})_{ij} + \beta_{7(1)}(\text{NO INSURANCE})_{ij} + \beta_8(\text{AGE})_{ij} + \beta_{9(1)}(\text{UNEMPLOYED})_{ij} + \beta_{9(2)}(\text{NEITHER EMPLOYED/UNEMPLOYED})_{ij} + \beta_{10(1)}(\text{RECESSION})_{ij} + \beta_{10(2)}(\text{RECOVERY})_{ij} + \beta_{11(1)}(\text{RURAL})_{ij} + \beta_{12}(\text{STATE UNEMPLOYMENT RATE})_i + \beta_{13}(\text{STATE POVERTY RATE})_i + e_{ij}$

Interpretation: If any Wald test of β_{10} is significant ($p \leq .05$), then we will conclude there is evidence to suggest there is a difference in our **outcomes** across these **Time-Periods**, adjusted for all other terms in the model. Our reference groups are specified in our model,

which allows us to compare both Recession & Recovery to the reference group (Pre-Recession).

In addition, we specify odds rations within our model statement. If the confidence interval for odds ratios do not include 1.0 (null), we conclude there is a difference in the odds ratios for our outcomes for each categorical variable. For example, if the lower and upper bounds of Time-Period (ref=Pre-Recession) do not include 1.0, and the odds ratio is greater than 1.0 for the Recession category of Time-Period (given we are modeling poor/fair health versus good/very good/excellent health), then we conclude there is a greater likelihood in the odds of reporting poor/fair health in the Recession when compared to the Pre-Recession Time-Period, adjusted for all other terms in the model. **Note: An explanation for each odds ratio is not given for all equations, however odds ratios are to be used throughout and interpreted in a similar way. Odds ratios will be calculated for each categorical variable and the interaction of categorical variables.**

Hypothesis 1B: Among working age adults, adverse changes across the period studied in self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost will be higher among African American, Hispanic, American Indian/Alaska Native and Asian adults than among White adults (referent group).

Hypothesis 1C: Among working age adults, post-Recession improvement in poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost will be will be lower among African American, Hispanic, American Indian/Alaska Native and Asian adults than among White adults.

Hypothesis 1B & 1C: Fully Adjusted Model: Random Intercept Only with 9 level 1 Predictors & 5 level 2 Predictors & Interaction Term

Level-1 (Fixed Effects) Race, Sex, Income-level, Education-level, Disability, Diabetes, Insurance, Age, Employment, Time-Period, Rurality

Level-2 Poverty Rates, Unemployment Rates, with Random Level-2 State Intercept.

Hypothesis 1B & 1C Interaction of interest: Time-Period*Race

Equation 2:

$$Y_{ij}=\beta_0+\beta_{1(1)}X_{1(OTHER)ij}+\beta_{1(2)}X_{1(AIAN)ij}+\beta_{1(3)}X_{1(ASIAN)ij}+\beta_{1(4)}X_{1(BLACK)ij}+\beta_{2(1)}X_{2(MALE)ij}$$
$$+\beta_{3(1)}X_{3(DK/NS/M)ij}+\beta_{3(2)}X_{3(<15k)ij}+\beta_{3(3)}X_{3(15k25k)ij}+\beta_{3(4)}X_{3(25k35k)ij}+\beta_{3(5)}X_{3(35k50k)ij}+\beta_{4(1)}X_{4(SOME.}$$
$$HS)ij+\beta_{4(2)}X_{4(HS.GRAD)ij}+\beta_{4(3)}X_{4(SOME.COLLEGE)ij}+\beta_{5(1)}X_{5(DISABLED)ij}+\beta_{6(1)}X_{6(DIABETES)ij}+$$
$$\beta_{7(1)}X_{7(NO\ INSURANCE)ij}+\beta_8X_{8ij}+\beta_{9(1)}X_{9(UNEMPLOYED)ij}+\beta_{9(2)}X_{9(NEITHER}$$
$$EMPLOYED/UNEMPLOYED)ij}+\beta_{10(1)}X_{10(RECESSION)ij}+\beta_{10(2)}X_{10(RECOVERY)ij}+\beta_{11(1)}X_{11(RURAL)ij}+$$
$$\beta_{12(1)}X_{10(RECESSION)ij}X_{1(OTHER)ij}+\beta_{12(2)}X_{10(RECOVERY)ij}X_{1(OTHER)ij}+$$
$$\beta_{12(3)}X_{10(RECESSION)ij}X_{1(AIAN)ij}+\beta_{12(4)}X_{10(RECOVERY)ij}X_{1(AIAN)ij}+$$
$$\beta_{12(5)}X_{10(RECESSION)ij}X_{1(ASIAN)ij}+\beta_{12(6)}X_{10(RECOVERY)ij}X_{1(ASIAN)ij}+$$
$$\beta_{12(7)}X_{10(RECESSION)ij}X_{1(BLACK)ij}+\beta_{12(8)}X_{10(RECOVERY)ij}X_{1(BLACK)ij}+\beta_{13}X_{13i}+\beta_{14}X_{14i}+e_{ij}$$

Where (Note: all definitions are adjusted for all other terms in the model),

Y_{ij} is the outcome for the *i*ith individual in the *j*th state

β_0 is the intercept, which is the overall average for our outcome

$\beta_{1(1)}X_{1(Other)ij}+\beta_{1(2)}X_{1(AIAN)ij}+\beta_{1(3)}X_{1(Asian)ij}+\beta_{1(4)}X_{1(Black)ij}$ is the linear combination of the indicators for race categories and the associated coefficients

$\beta_{2(1)}X_{2(Male)ij}$ is the linear combination of the indicators for sex categories and the associated coefficients

$\beta_{3(1)}X_{3(DK/NS/M)ij}+\beta_{3(2)}X_{3(<15k)ij}+\beta_{3(3)}X_{3(15k25k)ij}+\beta_{3(4)}X_{3(25k35k)ij}+\beta_{3(5)}X_{3(35k50k)ij}$ is the linear combination of the indicators for income categories and the associated coefficients

$\beta_{4(1)}X_{4(SOME.HS)ij}+\beta_{4(2)}X_{4(HS.GRAD)ij}+\beta_{4(3)}X_{4(SOME.COLLEGE)ij}$ is the linear combination of the indicators for education categories and the associated coefficients

$\beta_{5(1)}X_{5(DISABLED)ij}$ is the linear combination of the indicators for disability categories and the associated coefficients

$\beta_{6(1)}X_{6(DIABETES)ij}$ is the linear combination of the indicators for diabetes categories and the associated coefficients

$\beta_{7(1)}X_{7(NO\ INSURANCE)ij}$ is the linear combination of the indicators for insurance categories and the associated coefficients

$\beta_{8}X_{8ij}$ is the linear combination of the indicators for age and the associated coefficients

$\beta_{9(1)}X_{9(UNEMPLOYED)ij} + \beta_{9(2)}X_{9(NEITHER\ EMPLOYED/UNEMPLOYED)ij}$ is the linear combination of the indicators for employment categories and the associated coefficients

$\beta_{10(1)}X_{10(RECESSION)ij} + \beta_{10(2)}X_{10(RECOVERY)ij}$ is the linear combination of the indicators for time categories and the associated coefficients

$\beta_{11(1)}X_{11(RURAL)ij}$ is the linear combination of the indicators for rural categories and the associated coefficients

$\beta_{12(1)}X_{10(RECESSION)ij}X_{1(OTHER)ij} + \beta_{12(2)}X_{10(RECOVERY)ij}X_{1(OTHER)ij} +$

$\beta_{12(3)}X_{10(RECESSION)ij}X_{1(AIAN)ij} + \beta_{12(4)}X_{10(RECOVERY)ij}X_{1(AIAN)ij} +$

$\beta_{12(5)}X_{10(RECESSION)ij}X_{1(ASIAN)ij} + \beta_{12(6)}X_{10(RECOVERY)ij}X_{1(ASIAN)ij}+$ $\beta_{12(7)}X_{10(RECESSION)ij}X_{1(BLACK)ij} + \beta_{12(8)}X_{10(RECOVERY)ij}X_{1(BLACK)ij}$ is the linear combination of the indicators for time categories by race categories and the associated coefficients

$\beta_{13}X_{13i}$ is the linear combination of the indicators for continuous state-level unemployment rate and the associated coefficients, which is constant over each state, but varies across states

$\beta_{14}X_{14i}$ is the linear combination of the indicators for continuous state-level poverty rate and the associated coefficients, which is constant over each state, but varies across states

e_{ij} is the error term for the *i*th individual in the *j*th state

Equation 2: $Y_{ij} = \beta_0 +\beta_{1(1)}(OTHER)_{ij}+\beta_{1(2)}(AIAN)_{ij} +\beta_{1(3)}(ASIAN)_{ij} +\beta_{1(4)}(BLACK)_{ij}$ $+\beta_{2(1)}(MALE)_{ij}+\beta_{3(1)}(Don't\ Know/Not\ Sure/Missing)_{ij}+\beta_{3(2)}(<15k)_{ij} +\beta_{3(3)}(15k\text{-}25k)_{ij}$ $+\beta_{3(4)}(25k\text{-}35k)_{ij} +\beta_{3(5)}(35k\text{-}50k)_{ij} +\beta_{4(1)}(SOME\ HS)_{ij}+\beta_{4(2)}(HS\ GRAD)_{ij} +\beta_{4(3)}(SOME$ $COLLEGE)_{ij} +\beta_{5(1)}(DISABLED)_{ij}+\beta_{6(1)}(DIABETES)_{ij}+ \beta_{7(1)}(NO\ INSURANCE)_{ij} +$ $\beta_8(AGE)_{ij}+ \beta_{9(1)}(UNEMPLOYED)_{ij} + \beta_{9(2)}(NEITHER\ EMPLOYED/UNEMPLOYED)_{ij} +$ $\beta_{10(1)}(RECESSION)_{ij} + \beta_{10(2)}(RECOVERY)_{ij} + \beta_{11(1)}(RURAL)_{ij} +$ $\beta_{12(1)}(RECESSION)_{ij}(OTHER)_{ij} + \beta_{12(2)}(RECOVERY)_{ij}(OTHER)_{ij} +$ $\beta_{12(3)}(RECESSION)_{ij}(AIAN)_{ij} + \beta_{12(4)}(RECOVERY)_{ij}(AIAN)_{ij} +$ $\beta_{12(5)}(RECESSION)_{ij}(ASIAN)_{ij} + \beta_{12(6)}(RECOVERY)_{ij}(ASIAN)_{ij} +$ $\beta_{12(7)}(RECESSION)_{ij}(BLACK)_{ij} + \beta_{12(8)}(RECOVERY)_{ij}(BLACK)_{ij} + \beta_{13}(STATE$ $UNEMPLOYMENT\ RATE)_i + \beta_{14}(STATE\ POVERTY\ RATE)_i +e_{ij}$

Interpretation: If any Wald test of the interaction term β_{12} is significant ($p \leq .05$), then we will conclude there is evidence that there is a differential effect for our **outcomes** of **Race**

over **Time-Period**, adjusted for all other terms in the model. Odds ratios will provide information for specific comparisons.

Aim 2: To measure the extent to which state-level income inequality burdens vulnerable populations.

Hypothesis 2A: The effects of recession will be affected by GINI. (time by GINI) Among working age adults, holding race/ethnicity constant, poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost will be higher during the years 2008 – 2009 than during the years 2004 – 2007 and as state income inequality increases poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost will increase when compared to states with lower levels of income inequality.

Hypothesis 2A: **Fully Adjusted Model: Random Intercept Only with Level 1 Predictors & Level 2 Predictors & Interaction Term**

Level-1 (Fixed Effects) Race, Sex, Income-level, Education-level, Disability, Diabetes, Insurance, Age, Employment, Time-Period, Rurality & Level-2 Poverty Rates, Unemployment Rates & GINI, with Random Level-2 State Intercept.

Interaction: Time-Period*Race

Hypothesis 2AMain Effects of interest: GINI & Time-Period

Equation 3:

$$Y_{ij}=\beta_0+\beta_{1(1)}X_{1(OTHER)ij}+\beta_{1(2)}X_{1(AIAN)ij}+\beta_{1(3)}X_{1(ASIAN)ij}+\beta_{1(4)}X_{1(BLACK)ij}+\beta_{2(1)}X_{2(MALE)ij}$$
$$+\beta_{3(1)}X_{3(DK/NS/M)ij}+\beta_{3(2)}X_{3(<15k)ij}+\beta_{3(3)}X_{3(15k25k)ij}+\beta_{3(4)}X_{3(25k35k)ij}+\beta_{3(5)}X_{3(35k50k)ij}+\beta_{4(1)}X_{4(SOME.HS)ij}+\beta_{4(2)}X_{4(HS.GRAD)ij}+\beta_{4(3)}X_{4(SOME.COLLEGE)ij}+\beta_{5(1)}X_{5(DISABLED)ij}+\beta_{6(1)}X_{6(DIABETES)ij}+$$
$$\beta_{7(1)}X_{7(NO\ INSURANCE)ij}+\beta_8X_{8ij}+\beta_{9(1)}X_{9(UNEMPLOYED)ij}+\beta_{9(2)}X_{9(NEITHER\ EMPLOYED/UNEMPLOYED)ij}+\beta_{10(1)}X_{10(RECESSION)ij}+\beta_{10(2)}X_{10(RECOVERY)ij}+\beta_{11(1)}X_{11(RURAL)ij}+$$
$$\beta_{12(1)}X_{10(RECESSION)ij}X_{1(OTHER)ij}+\beta_{12(2)}X_{10(RECOVERY)ij}X_{1(OTHER)ij}+$$
$$\beta_{12(3)}X_{10(RECESSION)ij}X_{1(AIAN)ij}+\beta_{12(4)}X_{10(RECOVERY)ij}X_{1(AIAN)ij}+$$
$$\beta_{12(5)}X_{10(RECESSION)ij}X_{1(ASIAN)ij}+\beta_{12(6)}X_{10(RECOVERY)ij}X_{1(ASIAN)ij}+$$
$$\beta_{12(7)}X_{10(RECESSION)ij}X_{1(BLACK)ij}+\beta_{12(8)}X_{10(RECOVERY)ij}X_{1(BLACK)ij}+\beta_{13}X_{13i}+\beta_{14}X_{14i}+$$
$$\beta_{15(1)}X_{15(GINI\text{-}Q1)i}+\beta_{15(2)}X_{15(GINI\text{-}Q2)i}+\beta_{15(3)}X_{15(GINI\text{-}Q3)i}+e_{ij}$$

Where (Note: all definitions are adjusted for all other terms in the model),

Y_{ij} is the outcome for the *i*th individual in the *j*th state

β_0 is the intercept, which is the overall average for our outcome

$\beta_{1(1)}X_{1(Other)ij}+\beta_{1(2)}X_{1(AIAN)ij}+\beta_{1(3)}X_{1(Asian)ij}+\beta_{1(4)}X_{1(Black)ij}$ is the linear combination of the indicators for race categories and the associated coefficients

$\beta_{2(1)}X_{2(Male)ij}$ is the linear combination of the indicators for sex categories and the associated coefficients

$\beta_{3(1)}X_{3(DK/NS/M)ij}+\beta_{3(2)}X_{3(<15k)ij}+\beta_{3(3)}X_{3(15k25k)ij}+\beta_{3(4)}X_{3(25k35k)ij}+\beta_{3(5)}X_{3(35k50k)ij}$ is the linear combination of the indicators for income categories and the associated coefficients

$\beta_{4(1)}X_{4(SOME.HS)ij}+\beta_{4(2)}X_{4(HS.GRAD)ij}+\beta_{4(3)}X_{4(SOME.COLLEGE)ij}$ is the linear combination of the indicators for education categories and the associated coefficients

$\beta_{5(1)}X_{5(DISABLED)ij}$ is the linear combination of the indicators for disability categories and the associated coefficients

$\beta_{6(1)}X_{6(DIABETES)ij}$ is the linear combination of the indicators for diabetes categories and the associated coefficients

$\beta_{7(1)}X_{7(NO\ INSURANCE)ij}$ is the linear combination of the indicators for insurance categories and the associated coefficients

$\beta_{8}X_{8ij}$ is the linear combination of the indicators for age and the associated coefficients

$\beta_{9(1)}X_{9(UNEMPLOYED)ij} + \beta_{9(2)}X_{9(NEITHER\ EMPLOYED/UNEMPLOYED)ij}$ is the linear combination of the indicators for employment categories and the associated coefficients

$\beta_{10(1)}X_{10(RECESSION)ij} + \beta_{10(2)}X_{10(RECOVERY)ij}$ is the linear combination of the indicators for time categories and the associated coefficients

$\beta_{11(1)}X_{11(RURAL)ij}$ is the linear combination of the indicators for rural categories and the associated coefficients

$\beta_{12(1)}X_{10(RECESSION)ij}X_{1(OTHER)ij} + \beta_{12(2)}X_{10(RECOVERY)ij}X_{1(OTHER)ij} +$

$\beta_{12(3)}X_{10(RECESSION)ij}X_{1(AIAN)ij} + \beta_{12(4)}X_{10(RECOVERY)ij}X_{1(AIAN)ij} +$

$\beta_{12(5)}X_{10(RECESSION)ij}X_{1(ASIAN)ij} + \beta_{12(6)}X_{10(RECOVERY)ij}X_{1(ASIAN)ij}+$

$\beta_{12(7)}X_{10(RECESSION)ij}X_{1(BLACK)ij} + \beta_{12(8)}X_{10(RECOVERY)ij}X_{1(BLACK)ij}$ is the linear combination of the indicators for time categories by race categories and the associated coefficients

$\beta_{13}X_{13i}$ is the linear combination of the indicators for continuous state-level unemployment rate and the associated coefficients, which is constant over each state, but varies across states

$\beta_{14}X_{14i}$ is the linear combination of the indicators for continuous state-level poverty rate and the associated coefficients, which is constant over each state, but varies across states

$\beta_{15(1)}X_{15(GINI\text{-}Q1)i}+ \beta_{15(2)}X_{15(GINI\text{-}Q2)i} + \beta_{15(3)}X_{15(GINI\text{-}Q3)i}$ is the linear combination of the indicators for categorical state-level Gini ratio and the associated coefficients, which is constant over each state, but varies across states

e_{ij} is the error term for the *i*th individual in the *j*th state

Equation 3: $Y_{ij} = \beta_0 +\beta_{1(1)}(OTHER)_{ij}+\beta_{1(2)}(AIAN)_{ij} +\beta_{1(3)}(ASIAN)_{ij} +\beta_{1(4)}(BLACK)_{ij} +\beta_{2(1)}(MALE)_{ij}+\beta_{3(1)}(Don't\ Know/Not\ Sure/Missing)_{ij}+\beta_{3(2)}(<15k)_{ij} +\beta_{3(3)}(15k\text{-}25k)_{ij} +\beta_{3(4)}(25k\text{-}35k)_{ij} +\beta_{3(5)}(35k\text{-}50k)_{ij} +\beta_{4(1)}(SOME\ HS)_{ij}+\beta_{4(2)}(HS\ GRAD)_{ij} +\beta_{4(3)}(SOME\ COLLEGE)_{ij} +\beta_{5(1)}(DISABLED)_{ij}+\beta_{6(1)}(DIABETES)_{ij}+ \beta_{7(1)}(NO\ INSURANCE)_{ij} + \beta_8(AGE)_{ij}+ \beta_{9(1)}(UNEMPLOYED)_{ij} + \beta_{9(2)}(NEITHER\ EMPLOYED/UNEMPLOYED)_{ij} + \beta_{10(1)}(RECESSION)_{ij} + \beta_{10(2)}(RECOVERY)_{ij} + \beta_{11(1)}(RURAL)_{ij} + \beta_{12(1)}(RECESSION)_{ij}(OTHER)_{ij} + \beta_{12(2)}(RECOVERY)_{ij}(OTHER)_{ij} + \beta_{12(3)}(RECESSION)_{ij}(AIAN)_{ij} + \beta_{12(4)}(RECOVERY)_{ij}(AIAN)_{ij} + \beta_{12(5)}(RECESSION)_{ij}(ASIAN)_{ij} + \beta_{12(6)}(RECOVERY)_{ij}(ASIAN)_{ij} + \beta_{12(7)}(RECESSION)_{ij}(BLACK)_{ij} + \beta_{12(8)}(RECOVERY)_{ij}(BLACK)_{ij} + \beta_{13}(STATE\ UNEMPLOYMENT\ RATE)_i + \beta_{14}(STATE\ POVERTY\ RATE)_i + \beta_{15(1)}(GINI\text{-}Q1)_i + \beta_{15(2)}(GINI\text{-}Q1)_i + \beta_{15(3)}(GINI\text{-}Q1)_i + e_{ij}$

Interpretation 1: If the Wald test of β_{15} is significant ($p \leq .05$), then we will conclude that our **outcomes** differ for differing **GINI's** measured at the state, adjusted for all other terms in the model.

Interpretation 2: If any of the Wald test of β_{10} is significant ($p \leq .05$), then we will conclude our **outcomes** differ for differing **Time-Periods**, adjusted for all other terms in the model.

Hypothesis 2B: As state income inequality increases poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost will be higher among African American, Hispanic, American Indian/Alaska Native and Asian adults than among White adults when compared to states with lower levels of income inequality.

Hypothesis 2B: **Fully Adjusted Model: Random Intercept Only with Level 1 Predictors & Level 2 Predictors & Interaction Terms**

Level-1 (Fixed Effects) Race, Sex, Income-level, Education-level, Disability, Diabetes, Insurance, Age, Employment, Time-Period, Rurality

Level-2 Poverty Rates, Unemployment Rates & GINI, with Random Level-2 State Intercept.

Interaction: Time-Period*Race

Hypothesis 2B Cross-level Interaction of interest: GINI*Race

Equation 4:

$$Y_{ij}=\beta_0+\beta_{1(1)}X_{1(OTHER)ij}+\beta_{1(2)}X_{1(AIAN)ij}+\beta_{1(3)}X_{1(ASIAN)ij}+\beta_{1(4)}X_{1(BLACK)ij}+\beta_{2(1)}X_{2(MALE)ij}$$
$$+\beta_{3(1)}X_{3(DK/NS/M)ij}+\beta_{3(2)}X_{3(<15k)ij}+\beta_{3(3)}X_{3(15k25k)ij}+\beta_{3(4)}X_{3(25k35k)ij}+\beta_{3(5)}X_{3(35k50k)ij}+\beta_{4(1)}X_{4(SOME.HS)ij}+\beta_{4(2)}X_{4(HS.GRAD)ij}+\beta_{4(3)}X_{4(SOME.COLLEGE)ij}+\beta_{5(1)}X_{5(DISABLED)ij}+\beta_{6(1)}X_{6(DIABETES)ij}+\beta_{7(1)}X_{7(NO.INSURANCE)ij}+\beta_{8}X_{8ij}+\beta_{9(1)}X_{9(UNEMPLOYED)ij}+\beta_{9(2)}X_{9(NEITHER}$$

$_{\text{EMPLOYED/UNEMPLOYED)ij}} + \beta_{10(1)}X_{10(\text{RECESSION})ij} + \beta_{10(2)}X_{10(\text{RECOVERY})ij} + \beta_{11(1)}X_{11(\text{RURAL})ij} +$

$\beta_{12(1)}X_{10(\text{RECESSION})ij}X_{1(\text{OTHER})ij} + \beta_{12(2)}X_{10(\text{RECOVERY})ij}X_{1(\text{OTHER})ij} +$

$\beta_{12(3)}X_{10(\text{RECESSION})ij}X_{1(\text{AIAN})ij} + \beta_{12(4)}X_{10(\text{RECOVERY})ij}X_{1(\text{AIAN})ij} +$

$\beta_{12(5)}X_{10(\text{RECESSION})ij}X_{1(\text{ASIAN})ij} + \beta_{12(6)}X_{10(\text{RECOVERY})ij}X_{1(\text{ASIAN})ij} +$

$\beta_{12(7)}X_{10(\text{RECESSION})ij}X_{1(\text{BLACK})ij} + \beta_{12(8)}X_{10(\text{RECOVERY})ij}X_{1(\text{BLACK})ij} + \beta_{13}X_{13i} + \beta_{14}X_{14ii} +$

$\beta_{15(1)}X_{15(\text{GINI-Q1})i} + \beta_{15(2)}X_{15(\text{GINI-Q2})i} + \beta_{15(3)}X_{15(\text{GINI-Q3})i} + \beta_{16(1)}X_{15i}X_{1(\text{OTHER-Q1})ij} +$

$\beta_{16(2)}X_{15i}X_{1(\text{OTHER-Q2})ij} + \beta_{16(3)}X_{15i}X_{1(\text{OTHER-Q3})ij} + \beta_{16(4)}X_{15i}X_{1(\text{AIAN-Q1})ij} + \beta_{16(5)}X_{15i}X_{1(\text{AIAN-Q2})ij} + \beta_{16(6)}X_{15i}X_{1(\text{AIAN-Q3})ij} + \beta_{16(7)}X_{15i}X_{1(\text{ASIAN-Q1})ij} + \beta_{16(8)}X_{15i}X_{1(\text{ASIAN-Q2})ij} +$

$\beta_{16(9)}X_{15i}X_{1(\text{ASIAN-Q3})ij} + \beta_{16(10)}X_{15i}X_{1(\text{BLACK-Q1})ij} + \beta_{16(11)}X_{15i}X_{1(\text{BLACK-Q2})ij} +$

$\beta_{16(12)}X_{15i}X_{1(\text{BLACK-Q3})ij} + e_{ij}$

Where (Note: all definitions are adjusted for all other terms in the model),

Y_{ij} is the outcome for the *i*ith individual in the *j*th state

β_0 is the intercept, which is the overall average for our outcome

$\beta_{1(1)}X_{1(\text{Other})ij} + \beta_{1(2)}X_{1(\text{AIAN})ij} + \beta_{1(3)}X_{1(\text{Asian})ij} + \beta_{1(4)}X_{1(\text{Black})ij}$ is the linear combination of the indicators for race categories and the associated coefficients

$\beta_{2(1)}X_{2(\text{Male})ij}$ is the linear combination of the indicators for sex categories and the associated coefficients

$\beta_{3(1)}X_{3(\text{DK/NS/M})ij} + \beta_{3(2)}X_{3(<15k)ij} + \beta_{3(3)}X_{3(15k25k)ij} + \beta_{3(4)}X_{3(25k35k)ij} + \beta_{3(5)}X_{3(35k50k)ij}$ is the linear combination of the indicators for income categories and the associated coefficients

$\beta_{4(1)}X_{4(\text{SOME.HS})ij} + \beta_{4(2)}X_{4(\text{HS.GRAD})ij} + \beta_{4(3)}X_{4(\text{SOME.COLLEGE})ij}$ is the linear combination of the indicators for education categories and the associated coefficients

$\beta_{5(1)}X_{5(DISABLED)ij}$ is the linear combination of the indicators for disability categories and the associated coefficients

$\beta_{6(1)}X_{6(DIABETES)ij}$ is the linear combination of the indicators for diabetes categories and the associated coefficients

$\beta_{7(1)}X_{7(NO\ INSURANCE)ij}$ is the linear combination of the indicators for insurance categories and the associated coefficients

$\beta_{8}X_{8ij}$ is the linear combination of the indicators for age and the associated coefficients

$\beta_{9(1)}X_{9(UNEMPLOYED)ij} + \beta_{9(2)}X_{9(NEITHER\ EMPLOYED/UNEMPLOYED)ij}$ is the linear combination of the indicators for employment categories and the associated coefficients

$\beta_{10(1)}X_{10(RECESSION)ij} + \beta_{10(2)}X_{10(RECOVERY)ij}$ is the linear combination of the indicators for time categories and the associated coefficients

$\beta_{11(1)}X_{11(RURAL)ij}$ is the linear combination of the indicators for rural categories and the associated coefficients

$\beta_{12(1)}X_{10(RECESSION)ij}X_{1(OTHER)ij} + \beta_{12(2)}X_{10(RECOVERY)ij}X_{1(OTHER)ij} +$

$\beta_{12(3)}X_{10(RECESSION)ij}X_{1(AIAN)ij} + \beta_{12(4)}X_{10(RECOVERY)ij}X_{1(AIAN)ij} +$

$\beta_{12(5)}X_{10(RECESSION)ij}X_{1(ASIAN)ij} + \beta_{12(6)}X_{10(RECOVERY)ij}X_{1(ASIAN)ij}+$

$\beta_{12(7)}X_{10(RECESSION)ij}X_{1(BLACK)ij} + \beta_{12(8)}X_{10(RECOVERY)ij}X_{1(BLACK)ij}$ is the linear combination of the indicators for time categories by race categories and the associated coefficients

$\beta_{13}X_{13i}$ is the linear combination of the indicators for continuous state-level unemployment rate and the associated coefficients, which is constant over each state, but varies across states

$\beta_{14}X_{14i}$ is the linear combination of the indicators for continuous state-level poverty rate and the associated coefficients, which is constant over each state, but varies across states

$\beta_{15(1)}X_{15(GINI\text{-}Q1)i}+ \beta_{15(2)}X_{15(GINI\text{-}Q2)i} + \beta_{15(3)}X_{15(GINI\text{-}Q3)i}$ is the linear combination of the indicators for categorical state-level Gini ratio and the associated coefficients, which is constant over each state, but varies across states

$\beta_{16(1)}X_{15i}X_{1(OTHER\text{-}Q1)ij}+ \beta_{16(2)}X_{15i}X_{1(OTHER\text{-}Q2)ij}+ \beta_{16(3)}X_{15i}X_{1(OTHER\text{-}Q3)ij} + \beta_{16(4)}X_{15i}X_{1(AIAN\text{-}Q1)ij}+ \beta_{16(5)}X_{15i}X_{1(AIAN\text{-}Q2)ij}+ \beta_{16(6)}X_{15i}X_{1(AIAN\text{-}Q3)ij} + \beta_{16(7)}X_{15i}X_{1(ASIAN\text{-}Q1)ij} + \beta_{16(8)}X_{15i}X_{1(ASIAN\text{-}Q2)ij} + \beta_{16(9)}X_{15i}X_{1(ASIAN\text{-}Q3)ij} + \beta_{16(10)}X_{15i}X_{1(BLACK\text{-}Q1)ij} + \beta_{16(11)}X_{15i}X_{1(BLACK\text{-}Q2)ij} + \beta_{16(12)}X_{15i}X_{1(BLACK\text{-}Q3)ij}$ is the linear combination of the indicators for categorical state-level Gini ratio by race categories and the associated coefficients

e_{ij} is the error term for the *i*th individual in the *j*th state

Equation 4: $Y_{ij} = \beta_0 +\beta_{1(1)}(OTHER)_{ij}+\beta_{1(2)}(AIAN)_{ij} +\beta_{1(3)}(ASIAN)_{ij} +\beta_{1(4)}(BLACK)_{ij} +\beta_{2(1)}(MALE)_{ij}+\beta_{3(1)}(\text{Don't Know/Not Sure/Missing})_{ij}+\beta_{3(2)}(<15k)_{ij} +\beta_{3(3)}(15k\text{-}25k)_{ij} +\beta_{3(4)}(25k\text{-}35k)_{ij} +\beta_{3(5)}(35k\text{-}50k)_{ij} +\beta_{4(1)}(\text{SOME HS})_{ij}+\beta_{4(2)}(\text{HS GRAD})_{ij} +\beta_{4(3)}(\text{SOME COLLEGE})_{ij} +\beta_{5(1)}(DISABLED)_{ij}+\beta_{6(1)}(DIABETES)_{ij}+ \beta_{7(1)}(\text{NO INSURANCE})_{ij} + \beta_8(AGE)_{ij}+ \beta_{9(1)}(UNEMPLOYED)_{ij} + \beta_{9(2)}(\text{NEITHER EMPLOYED/UNEMPLOYED})_{ij} + \beta_{10(1)}(RECESSION)_{ij} + \beta_{10(2)}(RECOVERY)_{ij} + \beta_{11(1)}(RURAL)_{ij} + \beta_{12(1)}(RECESSION)_{ij}(OTHER)_{ij} + \beta_{12(2)}(RECOVERY)_{ij}(OTHER)_{ij} + \beta_{12(3)}(RECESSION)_{ij}(AIAN)_{ij} + \beta_{12(4)}(RECOVERY)_{ij}(AIAN)_{ij} + \beta_{12(5)}(RECESSION)_{ij}(ASIAN)_{ij} + \beta_{12(6)}(RECOVERY)_{ij}(ASIAN)_{ij} + \beta_{12(7)}(RECESSION)_{ij}(BLACK)_{ij} + \beta_{12(8)}(RECOVERY)_{ij}(BLACK)_{ij} + \beta_{13}(\text{STATE UNEMPLOYMENT RATE})_i + \beta_{14}(\text{STATE POVERTY RATE})_i + \beta_{15(1)}(GINI\text{-}Q1)_i + \beta_{15(2)}(GINI\text{-}Q1)_i + \beta_{15(3)}(GINI\text{-}Q1)_i + \beta_{16(1)}(GINI\text{-}Q1)_i(OTHER)_{ij} + \beta_{16(2)}(GINI\text{-}$

$Q2)_i(OTHER)_{ij} + \beta_{16(3)}(GINI\text{-}Q3)_i(OTHER)_{ij} + \beta_{16(4)}(GINI\text{-}Q1)_i(AIAN)_{ij} + \beta_{16(5)}(GINI\text{-}Q2)_i(AIAN)_{ij} + \beta_{16(6)}(GINI\text{-}Q3)_i(AIAN)_{ij} + \beta_{16(7)}(GINI\text{-}Q1)_i(ASIAN)_{ij} + \beta_{16(8)}(GINI\text{-}Q2)_i(ASIAN)_{ij} + \beta_{16(9)}(GINI\text{-}Q3)_i(ASIAN)_{ij} + \beta_{16(10)}(GINI\text{-}Q1)_i(BLACK)_{ij} + \beta_{16(11)}(GINI\text{-}Q2)_i(BLACK)_{ij} + \beta_{16(12)}(GINI\text{-}Q3)_i(BLACK)_{ij} + e_{ij}$

Interpretation: If any Wald test of β_{16} is significant ($p \leq .05$), then we will conclude there is a differential effect for our outcomes on **Race** by different **GINI's** measured at the state, adjusted for all other terms in the model.

Aim 3: To measure the extent that state-level Medicaid variation in coverage (differences in eligibility defined as the Percent of Federal Poverty for parents and childless adults) affect the degree (change between three time periods: pre-Recession, during the Recession & post-Recession) to which populations were burdened by the Recession.

Hypothesis 3A: Among working age adults, poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost will be lower for states with higher Medicaid Generosity (differences in eligibility defined as the Percent of Federal Poverty for parents and childless adults).

Hypothesis 3A: **Fully Adjusted Model: Random Intercept Only with Level 1 Predictors & Level 2 Predictors & Interaction Terms**

Level-1 (Fixed Effects) Race, Sex, Income-level, Education-level, Disability, Diabetes, Insurance, Age, Employment, Time-Period, Rurality

Level-2 Poverty Rates, Unemployment Rates & GINI, Medicaid Generosity with Random Level-2 State Intercept.

Interaction: Time-Period*Race

Cross-level Interaction: GINI*Race

Hypothesis 3A Main Effect of Interest: Medicaid Generosity

Note: Aim 3 is absent of GINI, models are left as they were proposed in the case (i.e. including GINI until the final papers are written in the case these models are needed for publication purposes)

Equation 5:

$$Y_{ij}=\beta_0+\beta_{1(1)}X_{1(OTHER)ij}+\beta_{1(2)}X_{1(AIAN)ij}+\beta_{1(3)}X_{1(ASIAN)ij}+\beta_{1(4)}X_{1(BLACK)ij}+\beta_{2(1)}X_{2(MALE)ij}$$
$$+\beta_{3(1)}X_{3(DK/NS/M)ij}+\beta_{3(2)}X_{3(<15k)ij}+\beta_{3(3)}X_{3(15k25k)ij}+\beta_{3(4)}X_{3(25k35k)ij}+\beta_{3(5)}X_{3(35k50k)ij}+\beta_{4(1)}X_{4(SOME.HS)ij}+\beta_{4(2)}X_{4(HS.GRAD)ij}+\beta_{4(3)}X_{4(SOME.COLLEGE)ij}+\beta_{5(1)}X_{5(DISABLED)ij}+\beta_{6(1)}X_{6(DIABETES)ij}+$$
$$\beta_{7(1)}X_{7(NO.INSURANCE)ij}+\beta_{8}X_{8ij}+\beta_{9(1)}X_{9(UNEMPLOYED)ij}+\beta_{9(2)}X_{9(NEITHER\ EMPLOYED/UNEMPLOYED)ij}+\beta_{10(1)}X_{10(RECESSION)ij}+\beta_{10(2)}X_{10(RECOVERY)ij}+\beta_{11(1)}X_{11(RURAL)ij}+$$
$$\beta_{12(1)}X_{10(RECESSION)ij}X_{1(OTHER)ij}+\beta_{12(2)}X_{10(RECOVERY)ij}X_{1(OTHER)ij}+$$
$$\beta_{12(3)}X_{10(RECESSION)ij}X_{1(AIAN)ij}+\beta_{12(4)}X_{10(RECOVERY)ij}X_{1(AIAN)ij}+$$
$$\beta_{12(5)}X_{10(RECESSION)ij}X_{1(ASIAN)ij}+\beta_{12(6)}X_{10(RECOVERY)ij}X_{1(ASIAN)ij}+$$
$$\beta_{12(7)}X_{10(RECESSION)ij}X_{1(BLACK)ij}+\beta_{12(8)}X_{10(RECOVERY)ij}X_{1(BLACK)ij}+\beta_{13}X_{13i}+\beta_{14}X_{14ii}+$$
$$\beta_{15(1)}X_{15(GINI\text{-}Q1)i}+\beta_{15(2)}X_{15(GINI\text{-}Q2)i}+\beta_{15(3)}X_{15(GINI\text{-}Q3)i}+\beta_{16(1)}X_{15i}X_{1(OTHER\text{-}Q1)ij}+$$
$$\beta_{16(2)}X_{15i}X_{1(OTHER\text{-}Q2)ij}+\beta_{16(3)}X_{15i}X_{1(OTHER\text{-}Q3)ij}+\beta_{16(4)}X_{15i}X_{1(AIAN\text{-}Q1)ij}+\beta_{16(5)}X_{15i}X_{1(AIAN\text{-}Q2)ij}+\beta_{16(6)}X_{15i}X_{1(AIAN\text{-}Q3)ij}+\beta_{16(7)}X_{15i}X_{1(ASIAN\text{-}Q1)ij}+\beta_{16(8)}X_{15i}X_{1(ASIAN\text{-}Q2)ij}+$$
$$\beta_{16(9)}X_{15i}X_{1(ASIAN\text{-}Q3)ij}+\beta_{16(10)}X_{15i}X_{1(BLACK\text{-}Q1)ij}+\beta_{16(11)}X_{15i}X_{1(BLACK\text{-}Q2)ij}+$$
$$\beta_{16(12)}X_{15i}X_{1(BLACK\text{-}Q3)ij}+\beta_{17(1)}X_{17(PARENTS\ <100\%FPL)i}+e_{ij}$$

When modeling Medicaid Generosity for childless adults β17 takes the following form: $\beta_{17(1)}X_{17(\text{CA NO COVERAGE})i}+\beta_{17(1)}X_{17(\text{CA COVERAGE <133\%FPL})i}$

Where (Note: all definitions are adjusted for all other terms in the model),

Y_{ij} is the outcome for the *i*ith individual in the *j*th state

β_0 is the intercept, which is the overall average for our outcome

$\beta_{1(1)}X_{1(\text{Other})ij}+\beta_{1(2)}X_{1(\text{AIAN})ij}+\beta_{1(3)}X_{1(\text{Asian})ij}+\beta_{1(4)}X_{1(\text{Black})ij}$ is the linear combination of the indicators for race categories and the associated coefficients

$\beta_{2(1)}X_{2(\text{Male})ij}$ is the linear combination of the indicators for sex categories and the associated coefficients

$\beta_{3(1)}X_{3(\text{DK/NS/M})ij}+\beta_{3(2)}X_{3(<15k)ij}+\beta_{3(3)}X_{3(15k25k)ij}+\beta_{3(4)}X_{3(25k35k)ij}+\beta_{3(5)}X_{3(35k50k)ij}$ is the linear combination of the indicators for income categories and the associated coefficients

$\beta_{4(1)}X_{4(\text{SOME.HS})ij}+\beta_{4(2)}X_{4(\text{HS.GRAD})ij}+\beta_{4(3)}X_{4(\text{SOME.COLLEGE})ij}$ is the linear combination of the indicators for education categories and the associated coefficients

$\beta_{5(1)}X_{5(\text{DISABLED})ij}$ is the linear combination of the indicators for disability categories and the associated coefficients

$\beta_{6(1)}X_{6(\text{DIABETES})ij}$ is the linear combination of the indicators for diabetes categories and the associated coefficients

$\beta_{7(1)}X_{7(\text{NO INSURANCE})ij}$ is the linear combination of the indicators for insurance categories and the associated coefficients

β_8X_{8ij} is the linear combination of the indicators for age and the associated coefficients

$\beta_{9(1)}X_{9(\text{UNEMPLOYED})ij} + \beta_{9(2)}X_{9(\text{NEITHER EMPLOYED/UNEMPLOYED})ij}$ is the linear combination of the indicators for employment categories and the associated coefficients

$\beta_{10(1)}X_{10(\text{RECESSION})ij} + \beta_{10(2)}X_{10(\text{RECOVERY})ij}$ is the linear combination of the indicators for time categories and the associated coefficients

$\beta_{11(1)}X_{11(\text{RURAL})ij}$ is the linear combination of the indicators for rural categories and the associated coefficients

$\beta_{12(1)}X_{10(\text{RECESSION})ij}X_{1(\text{OTHER})ij} + \beta_{12(2)}X_{10(\text{RECOVERY})ij}X_{1(\text{OTHER})ij} +$

$\beta_{12(3)}X_{10(\text{RECESSION})ij}X_{1(\text{AIAN})ij} + \beta_{12(4)}X_{10(\text{RECOVERY})ij}X_{1(\text{AIAN})ij} +$

$\beta_{12(5)}X_{10(\text{RECESSION})ij}X_{1(\text{ASIAN})ij} + \beta_{12(6)}X_{10(\text{RECOVERY})ij}X_{1(\text{ASIAN})ij} +$

$\beta_{12(7)}X_{10(\text{RECESSION})ij}X_{1(\text{BLACK})ij} + \beta_{12(8)}X_{10(\text{RECOVERY})ij}X_{1(\text{BLACK})ij}$ is the linear combination of the indicators for time categories by race categories and the associated coefficients

$\beta_{13}X_{13i}$ is the linear combination of the indicators for continuous state-level unemployment rate and the associated coefficients, which is constant over each state, but varies across states

$\beta_{14}X_{14i}$ is the linear combination of the indicators for continuous state-level poverty rate and the associated coefficients, which is constant over each state, but varies across states

$\beta_{15(1)}X_{15(\text{GINI-Q1})i} + \beta_{15(2)}X_{15(\text{GINI-Q2})i} + \beta_{15(3)}X_{15(\text{GINI-Q3})i}$ is the linear combination of the indicators for categorical state-level Gini ratio and the associated coefficients, which is constant over each state, but varies across states

$\beta_{16(1)}X_{15i}X_{1(\text{OTHER-Q1})ij} + \beta_{16(2)}X_{15i}X_{1(\text{OTHER-Q2})ij} + \beta_{16(3)}X_{15i}X_{1(\text{OTHER-Q3})ij} + \beta_{16(4)}X_{15i}X_{1(\text{AIAN-Q1})ij} + \beta_{16(5)}X_{15i}X_{1(\text{AIAN-Q2})ij} + \beta_{16(6)}X_{15i}X_{1(\text{AIAN-Q3})ij} + \beta_{16(7)}X_{15i}X_{1(\text{ASIAN-Q1})ij} +$

$\beta_{16(8)}X_{15i}X_{1(\text{ASIAN-Q2})ij} + \beta_{16(9)}X_{15i}X_{1(\text{ASIAN-Q3})ij} + \beta_{16(10)}X_{15i}X_{1(\text{BLACK-Q1})ij} +$

$\beta_{16(11)}X_{15i}X_{1(\text{BLACK-Q2})ij} + \beta_{16(12)}X_{15i}X_{1(\text{BLACK-Q3})ij}$ is the linear combination of the indicators for categorical state-level Gini ratio by race categories and the associated coefficients

$\beta_{17(1)}X_{17(\text{PARENTS <100\%FPL})i}$ is the linear combination of the indicators for state-level Medicaid Generosity and the associated coefficients

e_{ij} is the error term for the *i*th individual in the *j*th state

When modeling Medicaid Generosity for childless adults β17 takes the following form: $\beta_{17(1)}X_{17(\text{CA NO COVERAGE})i}+\beta_{17(1)}X_{17(\text{CA COVERAGE <133\%FPL})i}$

$\beta_{17(1)}X_{17(\text{CA NO COVERAGE})i}+\beta_{17(1)}X_{17(\text{CA COVERAGE <133\%FPL})i}$ is the linear combination of the indicators for state-level Medicaid Generosity and the associated coefficients

Equation 5: $Y_{ij} = \beta_0 +\beta_{1(1)}(\text{OTHER})_{ij}+\beta_{1(2)}(\text{AIAN})_{ij} +\beta_{1(3)}(\text{ASIAN})_{ij} +\beta_{1(4)}(\text{BLACK})_{ij} +\beta_{2(1)}(\text{MALE})_{ij}+\beta_{3(1)}(\text{Don't Know/Not Sure/Missing})_{ij}+\beta_{3(2)}(\text{<15k})_{ij} +\beta_{3(3)}(\text{15k-25k})_{ij} +\beta_{3(4)}(\text{25k-35k})_{ij} +\beta_{3(5)}(\text{35k-50k})_{ij} +\beta_{4(1)}(\text{SOME HS})_{ij}+\beta_{4(2)}(\text{HS GRAD})_{ij} +\beta_{4(3)}(\text{SOME COLLEGE})_{ij} +\beta_{5(1)}(\text{DISABLED})_{ij}+\beta_{6(1)}(\text{DIABETES})_{ij}+ \beta_{7(1)}(\text{NO INSURANCE})_{ij} + \beta_{8}(\text{AGE})_{ij}+ \beta_{9(1)}(\text{UNEMPLOYED})_{ij} + \beta_{9(2)}(\text{NEITHER EMPLOYED/UNEMPLOYED})_{ij} + \beta_{10(1)}(\text{RECESSION})_{ij} + \beta_{10(2)}(\text{RECOVERY})_{ij} + \beta_{11(1)}(\text{RURAL})_{ij} + \beta_{12(1)}(\text{RECESSION})_{ij}(\text{OTHER})_{ij} + \beta_{12(2)}(\text{RECOVERY})_{ij}(\text{OTHER})_{ij} + \beta_{12(3)}(\text{RECESSION})_{ij}(\text{AIAN})_{ij} + \beta_{12(4)}(\text{RECOVERY})_{ij}(\text{AIAN})_{ij} + \beta_{12(5)}(\text{RECESSION})_{ij}(\text{ASIAN})_{ij} + \beta_{12(6)}(\text{RECOVERY})_{ij}(\text{ASIAN})_{ij} + \beta_{12(7)}(\text{RECESSION})_{ij}(\text{BLACK})_{ij} + \beta_{12(8)}(\text{RECOVERY})_{ij}(\text{BLACK})_{ij} + \beta_{13}(\text{STATE UNEMPLOYMENT RATE})_{i} + \beta_{14}(\text{STATE POVERTY RATE})_{i} + \beta_{15(1)}(\text{GINI-Q1})_{i} + \beta_{15(2)}(\text{GINI-Q1})_{i} + \beta_{15(3)}(\text{GINI-Q1})_{i} + \beta_{16(1)}(\text{GINI-Q1})_{i}(\text{OTHER})_{ij} + \beta_{16(2)}(\text{GINI-Q2})_{i}(\text{OTHER})_{ij}+ \beta_{16(3)}(\text{GINI-Q3})_{i}(\text{OTHER})_{ij} + \beta_{16(4)}(\text{GINI-Q1})_{i}(\text{AIAN})_{ij} + \beta_{16(5)}(\text{GINI-}$

$Q2)_i(AIAN)_{ij} + \beta_{16(6)}(GINI\text{-}Q3)_i(AIAN)_{ij} + \beta_{16(7)}(GINI\text{-}Q1)_i(ASIAN)_{ij} + \beta_{16(8)}(GINI\text{-}Q2)_i(ASIAN)_{ij} + \beta_{16(9)}(GINI\text{-}Q3)_i(ASIAN)_{ij} + \beta_{16(10)}(GINI\text{-}Q1)_i(BLACK)_{ij} + \beta_{16(11)}(GINI\text{-}Q2)_i(BLACK)_{ij} + \beta_{16(12)}(GINI\text{-}Q3)_i(BLACK)_{ij} + \beta_{17}(MEDICAID\ GENEROSITY)_i + e_{ij}$

When modeling Medicaid Generosity for childless adults β17 takes the following form: $\beta_{17(1)}(CA\ NO\ COVERAGE)_i + \beta_{17(1)}(CA\ COVERAGE < 133\%FPL)_i$

$\beta_{17(1)}(CA\ NO\ COVERAGE)_i + \beta_{17(1)}(CA\ COVERAGE < 133\%FPL)_i$

Interpretation: If the Wald test of β_{17} is significant ($p \leq .05$), then we conclude there is a difference for our outcomes on Medicaid Generosity, adjusted for all other terms in the model.

Hypothesis 3B: Among working age adults, poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost will be lower for states with higher Medicaid Generosity and that differences for poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost among African American, Hispanic, American Indian/Alaska Native and Asian adults as compared to White adults will be smaller when compared to states without this Generosity. These changes will be assessed across 2004 - 2010 for change in poor or fair self-reported health status, self-reported days of poor mental and physical health, and reported delay in seeking care due to cost among African American, Hispanic, American Indian/Alaska Native and Asian adults as compared to White adults.

Hypothesis 3B: **Fully Adjusted Model: Random Intercept Only with Level 1 Predictors & Level 2 Predictors & Interaction Terms**

Level-1 (Fixed Effects) Race, Sex, Income-level, Education-level, Disability, Diabetes, Insurance, Age, Employment, Time-Period, Rurality

Level-2 Poverty Rates, Unemployment Rates & GINI, Medicaid Generosity with Random Level-2 State Intercept.

Interaction: Time-Period*Race

Cross-level Interaction: GINI*Race

Hypothesis 3B Cross-Level Interactions of Interest: Medicaid Generosity* Time-Period, Medicaid Generosity*Race, Medicaid Generosity*Race*Time-Period

Equation 6:

$$Y_{ij}=\beta_0+\beta_{1(1)}X_{1(OTHER)ij}+\beta_{1(2)}X_{1(AIAN)ij}+\beta_{1(3)}X_{1(ASIAN)ij}+\beta_{1(4)}X_{1(BLACK)ij}+\beta_{2(1)}X_{2(MALE)ij}$$
$$+\beta_{3(1)}X_{3(DK/NS/M)ij}+\beta_{3(2)}X_{3(<15k)ij}+\beta_{3(3)}X_{3(15k25k)ij}+\beta_{3(4)}X_{3(25k35k)ij}+\beta_{3(5)}X_{3(35k50k)ij}+\beta_{4(1)}X_{4(SOME.HS)ij}+\beta_{4(2)}X_{4(HS.GRAD)ij}+\beta_{4(3)}X_{4(SOME.COLLEGE)ij}+\beta_{5(1)}X_{5(DISABLED)ij}+\beta_{6(1)}X_{6(DIABETES)ij}+$$
$$\beta_{7(1)}X_{7(NO.INSURANCE)ij}+\beta_8X_{8ij}+\beta_{9(1)}X_{9(UNEMPLOYED)ij}+\beta_{9(2)}X_{9(NEITHER\ EMPLOYED/UNEMPLOYED)ij}+\beta_{10(1)}X_{10(RECESSION)ij}+\beta_{10(2)}X_{10(RECOVERY)ij}+\beta_{11(1)}X_{11(RURAL)ij}+$$
$$\beta_{12(1)}X_{10(RECESSION)ij}X_{1(OTHER)ij}+\beta_{12(2)}X_{10(RECOVERY)ij}X_{1(OTHER)ij}+$$
$$\beta_{12(3)}X_{10(RECESSION)ij}X_{1(AIAN)ij}+\beta_{12(4)}X_{10(RECOVERY)ij}X_{1(AIAN)ij}+$$
$$\beta_{12(5)}X_{10(RECESSION)ij}X_{1(ASIAN)ij}+\beta_{12(6)}X_{10(RECOVERY)ij}X_{1(ASIAN)ij}+$$
$$\beta_{12(7)}X_{10(RECESSION)ij}X_{1(BLACK)ij}+\beta_{12(8)}X_{10(RECOVERY)ij}X_{1(BLACK)ij}+\beta_{13}X_{13i}+\beta_{14}X_{14ii}+$$
$$\beta_{15}X_{15i}+\beta_{16(1)}X_{15i}X_{1(OTHER-Q1)ij}+\beta_{16(2)}X_{15i}X_{1(OTHER-Q2)ij}+\beta_{16(3)}X_{15i}X_{1(OTHER-Q3)ij}+$$

$\beta_{16(4)}X_{15i}X_{1(AIAN\text{-}Q1)ij} + \beta_{16(5)}X_{15i}X_{1(AIAN\text{-}Q2)ij} + \beta_{16(6)}X_{15i}X_{1(AIAN\text{-}Q3)ij} + \beta_{16(7)}X_{15i}X_{1(ASIAN\text{-}Q1)ij}$

$+ \beta_{16(8)}X_{15i}X_{1(ASIAN\text{-}Q2)ij} + \beta_{16(9)}X_{15i}X_{1(ASIAN\text{-}Q3)ij} + \beta_{16(10)}X_{15i}X_{1(BLACK\text{-}Q1)ij} +$

$\beta_{16(11)}X_{15i}X_{1(BLACK\text{-}Q2)ij} + \beta_{16(12)}X_{15i}X_{1(BLACK\text{-}Q3)ij} + \beta_{17(1)}X_{17(PARENTS\ <100\%FPL)i} +$

$\beta_{18(1)}X_{17(PARENTS\ <100\%FPL)i}X_{10(RECESSION)ij} + \beta_{18(2)}X_{17(PARENTS\ <100\%FPL)i}X_{10(RECOVERY)ij} +$

$\beta_{19(1)}X_{17(PARENT<100\%FPL)i}X_{1(OTHER)ij} + \beta_{19(2)}X_{17(PARENT<100\%FPL)i}X_{1(AIAN)ij} +$

$\beta_{19(3)}X_{17(PARENT<100\%FPL)i}X_{1(ASIAN)ij} + \beta_{19(4)}X_{17(PARENT<100\%FPL)i}X_{1(BLACK)ij} +$

$\beta_{20(1)}X_{17(PARENTS<100\%FPL)i}X_{10(RECESSION)ij}X_{1(OTHER)ij} +$

$\beta_{20(2)}X_{17(PARENTS<100\%FPL)i}X_{10(RECOVERY)ij}X_{1(OTHER)ij} +$

$\beta_{20(3)}X_{17(PARENTS<100\%FPL)i}X_{10(RECESSION)ij}X_{1(AIAN)ij} +$

$\beta_{20(4)}X_{17(PARENTS<100\%FPL)i}X_{10(RECOVERY)ij}X_{1(AIAN)ij} +$

$\beta_{20(5)}X_{17(PARENTS<100\%FPL)i}X_{10(RECESSION)ij}X_{1(ASIAN)ij} +$

$\beta_{20(6)}X_{17(PARENTS<100\%FPL)i}X_{10(RECOVERY)ij}X_{1(ASIAN)ij} +$

$\beta_{20(1)}X_{17(PARENTS<100\%FPL)i}X_{10(RECESSION)ij}X_{1(BLACK)ij} +$

$\beta_{20(2)}X_{17(PARENTS<100\%FPL)i}X_{10(RECOVERY)ij}X_{1(BLACK)ij} + e_{ij}$

When modeling Medicaid Generosity for childless adults β17, β18, β19 & β20 take the following form:

$\beta_{17(1)}X_{17(CA\ NO\ COVERAGE)i} + \beta_{17(1)}X_{17(CA\ COVERAGE\ <133\%FPL)i} +$

$\beta_{18(1)}X_{17(CA\ NO\ COVERAGE)i}X_{10(RECESSION)ij} + \beta_{18(2)}X_{17(CA\ NO\ COVERAGE)i}X_{10(RECOVERY)ij} +$

$\beta_{18(3)}X_{17(CA\ COVERAGE\ <133\%FPL)i}X_{10(RECESSION)ij} + \beta_{18(4)}X_{17(CA\ COVERAGE}$

$<133\%FPL)i}X_{10(RECOVERY)ij} + \beta_{19(1)}X_{17(CA\ NO\ COVERAGE)i}X_{1(OTHER)ij} + \beta_{19(2)}X_{17(CA\ COVERAGE}$

$<133\%FPL)i}X_{1(OTHER)ij} + \beta_{19(3)}X_{17(CA\ NO\ COVERAGE)i}X_{1(AIAN)ij} + \beta_{19(4)}X_{17(CA\ COVERAGE}$

$<133\%FPL)i}X_{1(AIAN)ij} + \beta_{19(5)}X_{17(CA\ NO\ COVERAGE)i}X_{1(ASIAN)ij} + \beta_{19(6)}X_{17(CA\ COVERAGE}$

$<133\%FPL)i}X_{1(ASIAN)ij} + \beta_{19(7)}X_{17(CA\ NO\ COVERAGE)i}X_{1(BLACK)ij} + \beta_{19(8)}X_{17(CA\ COVERAGE}$

$_{<133\%FPL)i}X_{1(BLACK)ij} + \beta_{20(1)}X_{17(CA\ NO\ COVERAGE)i}X_{10(RECESSION)ij}X_{1(OTHER)ij} +$

$\beta_{20(2)}X_{17(CA\ COVERAGE\ <133\%FPL)i}X_{10(RECESSION)ij}X_{1(OTHER)ij} +$

$\beta_{20(3)}X_{17(CA\ NO\ COVERAGE)i}X_{10(RECOVERY)ij}X_{1(OTHER)ij} +$

$\beta_{20(4)}X_{17(CA\ COVERAGE\ <133\%FPL)i}X_{10(RECOVERY)ij}X_{1(OTHER)ij} +$

$\beta_{20(5)}X_{17(CA\ NO\ COVERAGE)i}X_{10(RECESSION)ij}X_{1(AIAN)ij} +$

$\beta_{20(6)}X_{17(CA\ COVERAGE\ <133\%FPL)i}X_{10(RECESSION)ij}X_{1(AIAN)ij} +$

$\beta_{20(7)}X_{17(CA\ NO\ COVERAGE)i}X_{10(RECOVERY)ij}X_{1(AIAN)ij} +$

$\beta_{20(8)}X_{17(CA\ COVERAGE\ <133\%FPL)i}X_{10(RECOVERY)ij}X_{1(AIAN)ij} +$

$\beta_{20(9)}X_{17(CA\ NO\ COVERAGE)i}X_{10(RECESSION)ij}X_{1(ASIAN)ij} +$

$\beta_{20(10)}X_{17(CA\ COVERAGE\ <133\%FPL)i}X_{10(RECESSION)ij}X_{1(ASIAN)ij} +$

$\beta_{20(11)}X_{17(CA\ NO\ COVERAGE)i}X_{10(RECOVERY)ij}X_{1(ASIAN)ij} +$

$\beta_{20(12)}X_{17(CA\ COVERAGE\ <133\%FPL)i}X_{10(RECOVERY)ij}X_{1(ASIAN)ij} +$

$\beta_{20(13)}X_{17(CA\ NO\ COVERAGE)i}X_{10(RECESSION)ij}X_{1(BLACK)ij} +$

$\beta_{20(14)}X_{17(CA\ COVERAGE\ <133\%FPL)i}X_{10(RECESSION)ij}X_{1(BLACK)ij} +$

$\beta_{20(15)}X_{17(CA\ NO\ COVERAGE)i}X_{10(RECOVERY)ij}X_{1(BLACK)ij} +$

$\beta_{20(16)}X_{17(CA\ COVERAGE\ <133\%FPL)i}X_{10(RECOVERY)ij}X_{1(BLACK)ij} +$

Where (Note: all definitions are adjusted for all other terms in the model),

Y_{ij} is the outcome for the *i*ith individual in the *j*th state

β_0 is the intercept, which is the overall average for our outcome

$\beta_{1(1)}X_{1(Other)ij}+\beta_{1(2)}X_{1(AIAN)ij}+\beta_{1(3)}X_{1(Asian)ij}+\beta_{1(4)}X_{1(Black)ij}$ is the linear combination of the indicators for race categories and the associated coefficients

$\beta_{2(1)}X_{2(Male)ij}$ is the linear combination of the indicators for sex categories and the associated coefficients

$\beta_{3(1)}X_{3(DK/NS/M)ij}+\beta_{3(2)}X_{3(<15k)ij}+\beta_{3(3)}X_{3(15k25k)ij}+\beta_{3(4)}X_{3(25k35k)ij}+\beta_{3(5)}X_{3(35k50k)ij}$ is the linear combination of the indicators for income categories and the associated coefficients

$\beta_{4(1)}X_{4(SOME.HS)ij}+\beta_{4(2)}X_{4(HS.GRAD)ij}+\beta_{4(3)}X_{4(SOME.COLLEGE)ij}$ is the linear combination of the indicators for education categories and the associated coefficients

$\beta_{5(1)}X_{5(DISABLED)ij}$ is the linear combination of the indicators for disability categories and the associated coefficients

$\beta_{6(1)}X_{6(DIABETES)ij}$ is the linear combination of the indicators for diabetes categories and the associated coefficients

$\beta_{7(1)}X_{7(NO\ INSURANCE)ij}$ is the linear combination of the indicators for insurance categories and the associated coefficients

$\beta_{8}X_{8ij}$ is the linear combination of the indicators for age and the associated coefficients

$\beta_{9(1)}X_{9(UNEMPLOYED)ij} + \beta_{9(2)}X_{9(NEITHER\ EMPLOYED/UNEMPLOYED)ij}$ is the linear combination of the indicators for employment categories and the associated coefficients

$\beta_{10(1)}X_{10(RECESSION)ij} + \beta_{10(2)}X_{10(RECOVERY)ij}$ is the linear combination of the indicators for time categories and the associated coefficients

$\beta_{11(1)}X_{11(RURAL)ij}$ is the linear combination of the indicators for rural categories and the associated coefficients

$\beta_{12(1)}X_{10(RECESSION)ij}X_{1(OTHER)ij} + \beta_{12(2)}X_{10(RECOVERY)ij}X_{1(OTHER)ij} +$

$\beta_{12(3)}X_{10(RECESSION)ij}X_{1(AIAN)ij} + \beta_{12(4)}X_{10(RECOVERY)ij}X_{1(AIAN)ij} +$

$\beta_{12(5)}X_{10(RECESSION)ij}X_{1(ASIAN)ij} + \beta_{12(6)}X_{10(RECOVERY)ij}X_{1(ASIAN)ij} + \beta_{12(7)}X_{10(RECESSION)ij}X_{1(BLACK)ij} + \beta_{12(8)}X_{10(RECOVERY)ij}X_{1(BLACK)ij}$ is the linear combination of the indicators for time categories by race categories and the associated coefficients

$\beta_{13}X_{13i}$ is the linear combination of the indicators for continuous state-level unemployment rate and the associated coefficients, which is constant over each state, but varies across states

$\beta_{14}X_{14i}$ is the linear combination of the indicators for continuous state-level poverty rate and the associated coefficients, which is constant over each state, but varies across states

$\beta_{15(1)}X_{15(GINI-Q1)i} + \beta_{15(2)}X_{15(GINI-Q2)i} + \beta_{15(3)}X_{15(GINI-Q3)i}$ is the linear combination of the indicators for categorical state-level Gini ratio and the associated coefficients, which is constant over each state, but varies across states

$\beta_{16(1)}X_{15i}X_{1(OTHER-Q1)ij} + \beta_{16(2)}X_{15i}X_{1(OTHER-Q2)ij} + \beta_{16(3)}X_{15i}X_{1(OTHER-Q3)ij} + \beta_{16(4)}X_{15i}X_{1(AIAN-Q1)ij} + \beta_{16(5)}X_{15i}X_{1(AIAN-Q2)ij} + \beta_{16(6)}X_{15i}X_{1(AIAN-Q3)ij} + \beta_{16(7)}X_{15i}X_{1(ASIAN-Q1)ij} + \beta_{16(8)}X_{15i}X_{1(ASIAN-Q2)ij} + \beta_{16(9)}X_{15i}X_{1(ASIAN-Q3)ij} + \beta_{16(10)}X_{15i}X_{1(BLACK-Q1)ij} + \beta_{16(11)}X_{15i}X_{1(BLACK-Q2)ij} + \beta_{16(12)}X_{15i}X_{1(BLACK-Q3)ij}$ is the linear combination of the indicators for categorical state-level Gini ratio by race categories and the associated coefficients

$\beta_{17(1)}X_{17(PARENTS <100\%FPL)i}$ is the linear combination of the indicators for state-level Medicaid Generosity and the associated coefficients

$\beta_{18(1)}X_{17(PARENTS <100\%FPL)i}X_{10(RECESSION)ij} + \beta_{18(2)}X_{17(PARENTS<100\%FPL)i}X_{10(RECOVERY)ij}$ is the linear combination of the indicators for state-level Medicaid Generosity by time categories and the associated coefficients

$\beta_{19(1)}X_{17(\text{PARENT<100\%FPL})i}X_{1(\text{OTHER})ij} + \beta_{19(2)}X_{17(\text{PARENT<100\%FPL})i}X_{1(\text{AIAN})ij} +$

$\beta_{19(3)}X_{17(\text{PARENT<100\%FPL})i}X_{1(\text{ASIAN})ij} + \beta_{19(4)}X_{17(\text{PARENT<100\%FPL})i}X_{1(\text{BLACK})ij}$ is the linear combination of the indicators for state-level Medicaid Generosity by race categories and the associated coefficients

$\beta_{20(1)}X_{17(\text{PARENTS<100\%FPL})i}X_{10(\text{RECESSION})ij}X_{1(\text{OTHER})ij} +$

$\beta_{20(2)}X_{17(\text{PARENTS<100\%FPL})i}X_{10(\text{RECOVERY})ij}X_{1(\text{OTHER})ij} +$

$\beta_{20(3)}X_{17(\text{PARENTS<100\%FPL})i}X_{10(\text{RECESSION})ij}X_{1(\text{AIAN})ij} +$

$\beta_{20(4)}X_{17(\text{PARENTS<100\%FPL})i}X_{10(\text{RECOVERY})ij}X_{1(\text{AIAN})ij} +$

$\beta_{20(5)}X_{17(\text{PARENTS<100\%FPL})i}X_{10(\text{RECESSION})ij}X_{1(\text{ASIAN})ij} +$

$\beta_{20(6)}X_{17(\text{PARENTS<100\%FPL})i}X_{10(\text{RECOVERY})ij}X_{1(\text{ASIAN})ij} +$

$\beta_{20(1)}X_{17(\text{PARENTS<100\%FPL})i}X_{10(\text{RECESSION})ij}X_{1(\text{BLACK})ij} +$

$\beta_{20(2)}X_{17(\text{PARENTS<100\%FPL})i}X_{10(\text{RECOVERY})ij}X_{1(\text{BLACK})ij}$ is the linear combination of the indicators for state-level Medicaid Generosity by race categories & time categories and the associated coefficients

e_{ij} is the error term for the *i*th individual in the *j*th state

When modeling Medicaid Generosity for childless adults β17 takes the following form:

$\beta_{17(1)}X_{17(\text{CA NO COVERAGE})i}+\beta_{17(1)}X_{17(\text{CA COVERAGE <133\%FPL})i}$ is the linear combination of the indicators for state-level Medicaid Generosity and the associated coefficients

When modeling Medicaid Generosity for childless adults β18 takes the following form:

$\beta_{18(1)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECESSION})ij}+ \beta_{18(2)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECOVERY})ij} +$

$\beta_{18(3)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECESSION})ij} + \beta_{18(4)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECOVERY})ij}$ is the linear combination of the indicators for state-level Medicaid Generosity by time categories and the associated coefficients

When modeling Medicaid Generosity for childless adults β19 takes the following form:

$\beta_{19(1)}X_{17(\text{CA NO COVERAGE})i}X_{1(\text{OTHER})ij} + \beta_{19(2)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{1(\text{OTHER})ij} +$

$\beta_{19(3)}X_{17(\text{CA NO COVERAGE})i}X_{1(\text{AIAN})ij} + \beta_{19(4)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{1(\text{AIAN})ij} +$

$\beta_{19(5)}X_{17(\text{CA NO COVERAGE})i}X_{1(\text{ASIAN})ij} + \beta_{19(6)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{1(\text{ASIAN})ij} +$

$\beta_{19(7)}X_{17(\text{CA NO COVERAGE})i}X_{1(\text{BLACK})ij} + \beta_{19(8)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{1(\text{BLACK})ij}$ is the linear combination of the indicators for state-level Medicaid Generosity by race categories and the associated coefficients

When modeling Medicaid Generosity for childless adults β20 takes the following form:

$\beta_{20(1)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECESSION})ij}X_{1(\text{OTHER})ij} +$

$\beta_{20(2)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECESSION})ij}X_{1(\text{OTHER})ij} +$

$\beta_{20(3)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECOVERY})ij}X_{1(\text{OTHER})ij} +$

$\beta_{20(4)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECOVERY})ij}X_{1(\text{OTHER})ij} +$

$\beta_{20(5)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECESSION})ij}X_{1(\text{AIAN})ij} +$

$\beta_{20(6)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECESSION})ij}X_{1(\text{AIAN})ij} +$

$\beta_{20(7)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECOVERY})ij}X_{1(\text{AIAN})ij} +$

$\beta_{20(8)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECOVERY})ij}X_{1(\text{AIAN})ij} +$

$\beta_{20(9)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECESSION})ij}X_{1(\text{ASIAN})ij}$ +

$\beta_{20(10)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECESSION})ij}X_{1(\text{ASIAN})ij}$ +

$\beta_{20(11)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECOVERY})ij}X_{1(\text{ASIAN})ij}$ +

$\beta_{20(12)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECOVERY})ij}X_{1(\text{ASIAN})ij}$ +

$\beta_{20(13)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECESSION})ij}X_{1(\text{BLACK})ij}$ +

$\beta_{20(14)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECESSION})ij}X_{1(\text{BLACK})ij}$ +

$\beta_{20(15)}X_{17(\text{CA NO COVERAGE})i}X_{10(\text{RECOVERY})ij}X_{1(\text{BLACK})ij}$ +

$\beta_{20(16)}X_{17(\text{CA COVERAGE <133\%FPL})i}X_{10(\text{RECOVERY})ij}X_{1(\text{BLACK})ij}$ is the linear combination of the indicators for state-level Medicaid Generosity by race categories & time categories and the associated coefficients

Equation 6: $Y_{ij} = \beta_0 + \beta_{1(1)}(\text{OTHER})_{ij} + \beta_{1(2)}(\text{AIAN})_{ij} + \beta_{1(3)}(\text{ASIAN})_{ij} + \beta_{1(4)}(\text{BLACK})_{ij} + \beta_{2(1)}(\text{MALE})_{ij} + \beta_{3(1)}(\text{Don't Know/Not Sure/Missing})_{ij} + \beta_{3(2)}(\text{<15k})_{ij} + \beta_{3(3)}(\text{15k-25k})_{ij} + \beta_{3(4)}(\text{25k-35k})_{ij} + \beta_{3(5)}(\text{35k-50k})_{ij} + \beta_{4(1)}(\text{SOME HS})_{ij} + \beta_{4(2)}(\text{HS GRAD})_{ij} + \beta_{4(3)}(\text{SOME COLLEGE})_{ij} + \beta_{5(1)}(\text{DISABLED})_{ij} + \beta_{6(1)}(\text{DIABETES})_{ij} + \beta_{7(1)}(\text{NO INSURANCE})_{ij} + \beta_8(\text{AGE})_{ij} + \beta_{9(1)}(\text{UNEMPLOYED})_{ij} + \beta_{9(2)}(\text{NEITHER EMPLOYED/UNEMPLOYED})_{ij} + \beta_{10(1)}(\text{RECESSION})_{ij} + \beta_{10(2)}(\text{RECOVERY})_{ij} + \beta_{11(1)}(\text{RURAL})_{ij} + \beta_{12(1)}(\text{RECESSION})_{ij}(\text{OTHER})_{ij} + \beta_{12(2)}(\text{RECOVERY})_{ij}(\text{OTHER})_{ij} + \beta_{12(3)}(\text{RECESSION})_{ij}(\text{AIAN})_{ij} + \beta_{12(4)}(\text{RECOVERY})_{ij}(\text{AIAN})_{ij} + \beta_{12(5)}(\text{RECESSION})_{ij}(\text{ASIAN})_{ij} + \beta_{12(6)}(\text{RECOVERY})_{ij}(\text{ASIAN})_{ij} + \beta_{12(7)}(\text{RECESSION})_{ij}(\text{BLACK})_{ij} + \beta_{12(8)}(\text{RECOVERY})_{ij}(\text{BLACK})_{ij} + \beta_{13}(\text{STATE UNEMPLOYMENT RATE})_i + \beta_{14}(\text{STATE POVERTY RATE})_i + \beta_{15(1)}(\text{GINI-Q1})_i + \beta_{15(2)}(\text{GINI-Q1})_i + \beta_{15(3)}(\text{GINI-Q1})_i + \beta_{16(1)}(\text{GINI-Q1})_i(\text{OTHER})_{ij} + \beta_{16(2)}(\text{GINI-Q2})_i(\text{OTHER})_{ij} + \beta_{16(3)}(\text{GINI-Q3})_i(\text{OTHER})_{ij} + \beta_{16(4)}(\text{GINI-Q1})_i(\text{AIAN})_{ij} + \beta_{16(5)}(\text{GINI-}$

$Q2)_i(AIAN)_{ij} + \beta_{16(6)}(GINI\text{-}Q3)_i(AIAN)_{ij} + \beta_{16(7)}(GINI\text{-}Q1)_i(ASIAN)_{ij} + \beta_{16(8)}(GINI\text{-}Q2)_i(ASIAN)_{ij} + \beta_{16(9)}(GINI\text{-}Q3)_i(ASIAN)_{ij} + \beta_{16(10)}(GINI\text{-}Q1)_i(BLACK)_{ij} + \beta_{16(11)}(GINI\text{-}Q2)_i(BLACK)_{ij} + \beta_{16(12)}(GINI\text{-}Q3)_i(BLACK)_{ij} + \beta_{17(1)}(PARENTS <100\%FPL)_i + \beta_{18(1)}(PARENTS <100\%FPL)_i(RECESSION)_{ij} + \beta_{18(2)}(PARENTS <100\%FPL)_i(RECOVERY)_{ij}$

$+ \beta_{19(1)}(PARENTS <100\%FPL)_i(OTHER)_{ij} + \beta_{19(2)}(PARENTS <100\%FPL)_i(AIAN)_{ij} + \beta_{19(3)}(PARENTS <100\%FPL)_i(ASIAN)_{ij} + \beta_{19(4)}(PARENTS <100\%FPL)_i(BLACK)_{ij} + \beta_{20(1)}(PARENTS <100\%FPL)_i(RECESSION)_{ij}(OTHER)_{ij}$

$+\beta_{20\,(2)}(PARENTS <100\%FPL)_i(RECOVERY)_{ij}(OTHER)_{ij}$

$+\beta_{20\,(3)}(PARENTS <100\%FPL)_i(RECESSION)_{ij}(AIAN)_{ij}$

$+\beta_{20\,(4)}(PARENTS <100\%FPL)_i(RECOVERY)_{ij}(AIAN)_{ij}$

$+\beta_{20\,(5)}(PARENTS <100\%FPL)_i(RECESSION)_{ij}(ASIAN)_{ij}$

$+\beta_{20\,(6)}(PARENTS <100\%FPL)_i(RECOVERY)_{ij}(ASIAN)_{ij}$

$+\beta_{20\,(7)}(PARENTS <100\%FPL)_i(RECESSION)_{ij}(BLACK)_{ij}$

$+\beta_{20(8)}(PARENTS<100\%FPL)_i(RECOVERY)_{ij}(BLACK)_{ij} + e_{ij}$

When modeling Medicaid Generosity for childless adults β17, β18, β19 & β20 take the following form:

$\beta_{17(1)}(CA\ NO\ COVERAGE)_i + \beta_{17(2)}(CA\ COVERAGE <133\%FPL)_i +$

$\beta_{18(1)}(CA\ NO\ COVERAGE)_i(RECESSION)_{ij} + \beta_{18(2)}(CA\ NO\ COVERAGE)_i(RECOVERY)_{ij} +$

$\beta_{18(3)}$ (CA COVERAGE <133%FPL)$_i$ (RECESSION)$_{ij}$+

$\beta_{18(4)}$ (CA COVERAGE <133%FPL)$_i$ (RECOVERY)$_{ij}$ +

$\beta_{19(1)}$ (CA NO COVERAGE)$_i$ (OTHER)$_{ij}$ + $\beta_{19(2)}$ (CA COVERAGE <133%FPL)$_i$ (OTHER)$_{ij}$ + $\beta_{19(3)}$ (CA NO COVERAGE)$_i$ (AIAN)$_{ij}$ + $\beta_{19(4)}$ (CA COVERAGE <133%FPL)$_i$ (AIAN)$_{ij}$ + $\beta_{19(5)}$ (CA NO COVERAGE)$_i$ (ASIAN)$_{ij}$ + $\beta_{19(6)}$ (CA COVERAGE <133%FPL)$_i$ (ASIAN)$_{ij}$ + $\beta_{19(7)}$ (CA NO COVERAGE)$_i$ (BLACK)$_{ij}$ + $\beta_{19(8)}$ (CA COVERAGE <133%FPL)$_i$ (BLACK)$_{ij}$ +

$\beta_{20(1)}$ (CA NO COVERAGE)$_i$ (RECESSION)$_{ij}$ (OTHER)$_{ij}$ +

$\beta_{20(1)}$ (CA COVERAGE <133%FPL)$_i$ (RECESSION)$_{ij}$ (OTHER)$_{ij}$ +

$\beta_{20(3)}$ (CA NO COVERAGE)$_i$ (RECOVERY)$_{ij}$ (OTHER)$_{ij}$ +

$\beta_{20(4)}$ (CA COVERAGE <133%FPL)$_i$ (RECOVERY)$_{ij}$ (OTHER)$_{ij}$ +

$\beta_{20(5)}$ (CA NO COVERAGE)$_i$(RECESSION)$_{ij}$ (AIAN)$_{ij}$ +

$\beta_{20(6)}$ (CA COVERAGE <133%FPL)$_i$ (RECESSION)$_{ij}$ (AIAN)$_{ij}$ +

$\beta_{20(7)}$ (CA NO COVERAGE)$_i$ (RECOVERY)$_{ij}$ (AIAN)$_{ij}$ +

$\beta_{20(8)}$ (CA COVERAGE <133%FPL)$_i$ (RECOVERY)$_{ij}$ (AIAN)$_{ij}$ +

$\beta_{20(9)}$ (CA NO COVERAGE)$_i$ (RECESSION)$_{ij}$ (ASIAN)$_{ij}$ +

$\beta_{20(10)}$ (CA COVERAGE <133%FPL)$_i$ (RECESSION)$_{ij}$X$_1$(ASIAN)$_{ij}$ +

$\beta_{20(11)}$ (CA NO COVERAGE)$_i$ (RECOVERY)$_{ij}$ (ASIAN)$_{ij}$ +

$\beta_{20(12)}$ (CA COVERAGE <133%FPL)$_i$ (RECOVERY)$_{ij}$ (ASIAN)$_{ij}$ +

$\beta_{20(13)}$ (CA NO COVERAGE)$_i$ (RECESSION)$_{ij}$ (BLACK)$_{ij}$ +

$\beta_{20(14)}$ (CA COVERAGE <133%FPL)$_i$ (RECESSION)$_{ij}$ (BLACK)$_{ij}$ +

$\beta_{20(15)}$ (CA NO COVERAGE)$_i$ (RECOVERY)$_{ij}$ (BLACK)$_{ij}$ +

$\beta_{20(16)}$ (CA COVERAGE <133%FPL)$_i$ (RECOVERY)$_{ij}$ (BLACK)$_{ij}$ +

Interpretation 1: If any Wald test of β_{18} is significant ($p \leq .05$), then we will conclude there is a differential effect for our **outcomes** on **Medicaid Generosity** by **Time-Period**, adjusted for all other terms in the model.

Interpretation 2: If any Wald test of β_{19} is significant ($p \leq .05$), then we will conclude there is a differential effect for our **outcomes** of **Race** over levels of **Medicaid Generosity**, adjusted for all other terms in the model.

Interpretation 3: If any Wald test of β_{20} is significant ($p \leq .05$), then we will conclude there is a differential effect for our **outcomes** of **Race** over levels of **Medicaid Generosity** & **Time-Period**, adjusted for all other terms in the model.

Possible policy implications

1. Are there certain populations and other subgroups that have a greater negative or positive reaction to the economic downturn and recovery? If so, how much do contextual cross-level factors moderate these relationships and is it different by race?

2. Are there areas that have differing characteristics and state-level policies for publicly funded insurance that may be useful in removing/reducing this cross-level interaction (individual outcomes of interest on individual's race by state-level income inequality) for those that are at/below the federal poverty level?

What characteristics of a state (i.e. Medicaid Generosity) may reduce the effects of the Recession?

Strengths

The strength of using the BRFSS data is in the ability to identify race/ethnicity into more than the widely used White, Black, Hispanic and other. Using data from 2004-2010, allows us to identify trends across time. This will includes a period spanning before the Recession, up to the Recession, during and into the economic recovery. This allows us to identify differences between race/ethnicity and within race across rurality. Our data contain unlinked individuals (not the same across time as with a longitudinal design); however, our purpose is to measure the change in racial/ethnic groups and not specific individuals. Individuals are linked (non-independence) by race and ethnic categories or sub-groups. We measure the change in the average measures for sub-groups of each race/ethnicity identified.

However, different methods not used in the current analysis across a variety of datasets and levels of observation, have been proposed (LI et al., 2009)[153]; (Malec & Sedransk, 2003)[154];(Malec et al., 1999)[155]. For example, Schneider et al. (2009) uses BRFSS data from 2000 and the ARF to conduct an analysis using small-area estimation to describe county-level disparities in mammography screening for woman aged 40-79 years of age.

3.9 LIMITATIONS

The data used in this analysis is cross-sectional in nature, however we used several consecutive years of data to identify trends across time. In addition, the data cannot be linked from year to year based on the same individuals.

Identifying change over time for specific persons is outside the scope of this analysis. However, the objective was to assess changes in estimates for racial and ethnic groups and not specific individuals over time.

Another limitation involves the use of sampling weights in our analysis. The sampling weights included in the BRFSS were derived from measures of the number of people measured by age-by-race or age-by-sex in a region or state; the inverse number of residential telephone numbers in the respondent's household and the number of adults in the respondent's house (CDC, 2012)[156]. Our state data lack sampling weights initially.

We also have the Number of Sample Records Selected from Stratum, the Number of Telephone Numbers in Stratum from Which Sample Was Selected, the Number of Adults in Household, and the Geographic Stratum Code from the BRFSS data. Including these variables (those making up the sampling weights) in the analysis has been suggested as a means to minimize the sampling bias present when the sampling weights cannot be used (Chen & Gotway, p. 1029, 2012).; (Muramatsu , p 1872, 2003)[157(p1872)]

Table 3.8. BRFSS Codebook for the Variables Used [base variable]

Outcomes of Interest (Self-reported)	General Health Status*(italicized not included in current analysis)* [GENHLTH]	Would you say that in general your health is: Fair; Poor; Good; Very Good; Excellent; *don't know/not sure, Refused*
	Poor Physical Health days [PHYSHLTH]	Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?
	Poor Mental Health Days [MENTHLTH]	Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?
	Cost-related Forgone Medical care [MEDCOST]	Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?
Independent Variables	Race/Ethnicity *(italicized not included in current analysis)* [_PRACE]	Preferred race category: White; Black or African American; Asian;; American Indian; Alaska Native; Other (also including No Preference; Multiracial but preferred race not asked and Native Hawaiian or Other Pacific Islander)*; Don't Know, Not Sure; Refused*
Controls	Insurance Coverage [HLTHPLAN]	Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare, or Indian Health Service
	Employment Status *(italicized not included in current analysis)* [EMPLOY]	Employed for wages; Self-employed; Out of work for more than 1 year; Out of work for less than 1 year; A homemaker; A student; Retired; Unable to work; *Refused*
	Age [AGE]	What is your age? (Note: ages 18-64 included in current analysis)

Education level [_EDUCAG]	Level of education completed: Did not graduate High School; Graduated High School; Attended College or Technical School; Graduated from College or Technical School; Don't know/Not sure/Missing
Income level [_INCOMG]	Less than $15,000; $15,000 to less than $25,000; $25,000 to less than $35,000; $35,000 to less than $50,000; $50,000 or more; Don't know/Not sure/Missing
Sex [SEX]	Male or Female

Table 3.9. Area Resource File (ARF) Codebook for the Variables Used

Control	Rurality defined by the Urban Influence Code (2003) [F12559-03]	*Modified Form of UIC Codes* **Metropolitan** (UIC Codes 01-02) versus **Non-Metropolitan** (UIC Codes 03-12) *Original Form of UIC Codes* METROPOLITAN 01 Large - in a metro area with at least 1 million residents or more 02 Small in a metro area with fewer than 1 million residents NONMETROPOLITAN 03 Micropolitan adjacent to a large metro area 04 Noncore adjacent to a large metro area 05 Micropolitan adjacent to a small metro area 06 Noncore adjacent to a small metro area with a town of at least 2,500 07 Noncore adjacent to a small metro area and does not contain a town of at least 2,500 residents 08 Micropolitan not adjacent to a metro area 09 Noncore adjacent to a micro area and contains a town of 2,500-9,999 residents 10 Noncore adjacent to micro area and does not contain a town of at least 2,500 residents 11 Noncore not adjacent to a metro/micro area and contains a town of 2,500 or more residents 12 Noncore not adjacent to a metro/micro area and does not contain a town of at least 2,500 residents 00 Missing Value

CHAPTER 4

Section 4.1

Paper 1 Title:

DIFFERENTIAL EFFECTS OF THE GREAT RECESSION AMONG MINORITY POPULATIONS[1]

[1] Towne SD, Probst JC, Hardin JW, Bell B, Glover S. 2013. To be submitted to the *Journal of the Poor and Underserved*.

Abstract

The Great Recession of 2008 and 2009 affected millions of individuals. Major shifts in the economy provided lasting effects for many Americans. We measured whether differential effects of the Great Recession were experience by different racial groups. Our primary outcomes of interest were the number of days in the past 30 when one's mental health was not good (one or more versus none), the number of days in the past 30 when one's physical health was not good (one or more versus none), whether individuals reported not seeking health care when they thought it was necessary due to cost in the past 12 months and individual's self-reported health status (fair or poor versus good, very good or excellent). We measured differences in American Indians or Alaska Native, Black and Asian individuals as compared to White individuals. We find that differences in our outcomes of interest are present throughout the Great Recession among racial minority groups and when compared to White individuals.

Employer sponsored health insurance and the Great Recession

The sustained economic downturn of December 2007 – June 2009 is also known as the Great Recession (hereafter, the Recession) (BLS (a), 2012)[158]. In the US, the annual average unemployment rate (civilian labor force 16 years and over), which had dropped from 6.0% in 2003, to a low of 4.6% for both 2006 and 2007; rose to a high of 9.6% in 2010 (BLS (b), 2012)[159]. Subsequently, through economic recovery, the national unemployment rate dropped to 7.7%, by 2012 (BLS (c), 2012)[160].

Currently, employer-sponsored health insurance serves as the largest source of health insurance for adults (under 65) in the US (Fronstin, 2012)[161]. The loss of employment may include the loss of health insurance for millions of Americans. The loss of employer-sponsored health insurance related to a lost job (within the past two years, reported in 2010) by a family member reached 47% among adults in families with a job loss (Collins, 2011)[162]. In 2010, loss of employment included the loss of employer-sponsored health insurance for 57% of individuals losing jobs (among those with health coverage through their job that was lost), or about nine million individuals (Collins, p. X, 2011). Among those earning less than 200% of the federal poverty level, 70% reported a loss of employer-sponsored health insurance tied to the loss of their employment (Collins, p. X, Exhibit ES-1, 2011). This loss of employer-sponsored health insurance coverage may force individuals to shop for insurance on the individual market. Difficulty in finding the coverage needed on the individual insurance market was reported for 11 million individuals, especially for those with a health problem (53%), or at less than 200% of the federal poverty level (49%), in comparison to those with no health problems

(31%) (Collins, p. XI, Exhibit ES-2, 2011). Employment may serve as an important factor related to having insurance and health.

Potential Health and Utilization Correlates of Recession

The number of working age adults (ages 19-64) who reported cost-related access problems for healthcare increased from an estimated 64 million in 2005 to 75 million individuals in 2010 (Collins, p. XII, Exhibit ES-3, 2011). Similar findings have been found with regard to those reporting having any bill problem or medical debt, with a rise from 58 to 73 million individuals during the same period (Collins, p. XII, Exhibit ES-3, 2011). The rise in medical debt for those under 65 has also risen (Doty et al., 2005)[163], especially in the Recession (Sommers & Cunningham, 2011)[164]. Those with medical debt are also more likely to forgo needed care than those without such debt (Doty et al., 2005).

Financial stressors may be associated with poor quality of life and the number of days one is in poor mental health. Persons over 50 years of age who were delinquent in their mortgage were more likely to report depressive symptoms than those not delinquent on their mortgages (Alley, p. 2,296, 2011) [165]. Unemployment has been associated with poor life evaluation, being worried and being sad during the Recession (Deaton, p. 16 & 39-40, 2012)[166]. In a small study in Philadelphia, individuals undergoing home foreclosure were at higher risk than others in the same community for lacking health insurance and prescription non-adherence due to cost (Pollack & Lynch, 2009)[167].

Disparities in health, utilization and access, in general have historically been present for vulnerable populations. Non-White populations in the US are more likely to

report having unmet health needs, and "to forgo needed medicines" when compared to White populations (Lasser et al., p1305, 2006)[168].

Examining self-reported health status adults aged 25-74 for the years 1988-2007, Braveman and colleagues found that Black, Hispanic, Native Hawaiian/Pacific Islander and Asian populations have higher rates of less than excellent or very good health status when compared to White populations at any level of educational attainment (Braveman et al., Table 2, 2010). Various measures of health (i.e. self-reported health including quality of life, depression, and having depressive symptoms) differ across racial/ethnic groups (i.e. Native American and Alaskan Native populations) (Miranda, 2003)[169]; (CDC, 2011)[170]; (Taylor, 2005)[171]. Disparities in the proportions of adults who lacked health insurance were consistent across the Recession for Minority populations.

In 2004, a greater proportion of American Indian (35%) and Hispanic (35%) adults under age 65 lacked health insurance than similar non-Hispanic Black (18%), Asian (16%) and non-Hispanic White (12%) non-elderly adults (Mead, et al., p. 55, 2008)[172]. Before, during and after the Recession, White individuals had lower rates of being uninsured when compared to Black, Asian and Hispanic individuals (DeNavas-Walt et al., 2010) [173](US Census Bureau, 2011)[174] (US Census Bureau, 2011)[175]. The previous studies document that the proportion of persons who lack health insurance increased throughout the Recession. The current study will address the question of the degree to which the lack of insurance, coupled with other financial stressors, may have affected health across adults of different racial groups.

Social Determinants of Health

Individual and community environmental and sociodemographic characteristics play an important role in personal health. An individual's environment includes socio-demographic characteristics of neighborhoods, or states. Income, education and employment are examples of social determinants of health that may be related to the health effects of economic decline. Minority populations within the US tend to fare worse in such social determinants. For example, Black and Hispanic populations in the US lag behind White populations in adult educational attainment, while Asian adults parallel White individuals (Glover et al, 2004)[176]; (Ryan & Siebens, p. 5, 2012)[177]; (Liao et al, 2011)[178]. Similarly, Black, Hispanic, and American Indian and Alaska Native adults have lower health literacy than both White and Asian/Pacific Islander adults (Kutner et al, 2006)[179].

Economically disadvantaged population may suffer more than those in better economic positions prior to the start of an economic recession. Prior to the Recession, employment rates for Black individuals lagged behind White & Asian individuals (US Department of Labor and the US Bureau of Labor Statistics, p. 1, 2008)[180]. Labor force participation rates were lowest for American Indian and Alaska Native individuals (lower than any race and ethnicity group), followed by Black individuals in 2011 (US Department of Labor and the US Bureau of Labor Statistics , 2012). Similar disparities exist for income. In 2009, populations categorized as Asian alone had the highest median earnings ($38,963) for workers 25 years or older, followed by White alone ($34,949), Black alone ($28,101), and Hispanic of any race ($23,689) (Ryan & Siebens, p. 13, 2012). Even within similar education levels, minority adults had lower median income

than White adults (Ryan & Siebens, p. 13, 2012). When compared to other racial and ethnic groups, White populations had lower poverty rates in general [181](DeNavas-Walt et al., 2011). While limited to selected area, the CDCs Racial and Ethnic Approaches to Community Health (REACH) survey documented lower median income levels in Black and Hispanic communities than in comparison communities in 2009 (Liao et al, 2011).

Purpose

Minority populations may have suffered more than White individuals during the Recession and into the economic recovery. Research suggests minority populations have poorer social determinants of health when compared to White individuals. Economic declines may affect already burdened and under-studied populations differently than White individuals. We sought to examine whether adverse economic changes from the Recession were associated with adverse changes in health care utilization and health outcomes, and whether these changes were greater among minority populations. We measured whether the Recession and subsequent recovery had differential effects on general health status, poor mental and physical health days, and cost-related forgone medical care among non-white working-age adults, compared to White working-age adults.

Methods

Population studied

The target population was non-institutionalized working aged adults (ages 18-64) residing in the United States between the years 2004 -2010. Individual level information is taken from the Behavioral Risk Factor Surveillance System (BRFSS). The base

number of observations for each year under study are 303,822 for 2004; 356,112 for 2005; 355,710 for 2006; 430,912 for 2007; 414,509 for 2008; 432,607 for 2009; and 451,075 for 2010 [182](Centers for Disease Control and Prevention, 2000-2011). Restricting the samples to those aged 18 – 64 reduced our sample sizes to 255,461 for 2010; 255,943 for 2009; 252,903 for 2008; 266,340 for 2007; 226,517 for 2006; 232,524 for 2005; and 204,053 for 2004.

After deleting observations with missing data for race, sex, education, insurance status, employment status, rurality, diabetes status and disability status, there were a total of 1,886,146 observations, with per-year numbers ranging from 224,483 to 295,545 (See Table 4.1.1).

Dependent Variables

Primary outcomes were as follows: general health status (fair or poor versus good; very good or excellent) (CDC, 2008)[183]; poor physical health days (number of days (during the past 30 days) when physical health was not good), collapsed into one or more versus none; poor mental health days (number of days (during the past 30 days) when mental health was not good) collapsed into one or more versus none; cost-related forgone medical care (time in the past 12 months when one needed to see a doctor but could not because of cost).

Individual Independent Variables

Race categories are included in our analyses as an independent variable at the individual-level, and are based on the individual's reported preferred race category. Categories include: American Indian or Alaska Native (AIAN), White, Black, Asian, and

Other with varying sample sizes for each year under study. The category Other includes individuals reporting Other, no preferred race, multiracial but preferred race not asked and Native Hawaiian or other Pacific Islander. We focus the adjusted analysis on identifiable race categories, while excluding the category of Other. The number of individuals of each race varied by state of residence, with ranges as follows: White 10,292 (Hawaii) – 76,708 (Washington); Black 61 (Montana) – 10,823 (North Carolina); Asian 60 (West Virginia) – 8,629 (Hawaii); AIAN 79 (Iowa) – 2,947 (Oklahoma); Other 72 (West Virginia) – 4,341 (Massachusetts).

Individual Level Control Variables

All individual-level covariates are coded with meaningful zeros (except age). Age is grand mean centered at level-one, as we are interested in the effect of a higher-level factor on an individual-level variable (Enders & Tofighi, 2007)[184]. In addition, this allows more direct comparisons of effect sizes. Hofmann & Gavin (1998)[185] provide a detailed explanation of interpreting grand-mean centered results in analysis using multi-level models.

Insurance status is included (2005 BRFSS codebook: "Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare") to assess differences across insurance status. Having no health insurance is coded as zero.

Income was coded as annual household income from all sources: Less than $15,000; $15,000 (coded as zero) to less than $25,000; $25,000 to less than $35,000; $35,000 to less than $50,000; $50,000 or more; and don't know/not sure/missing. Don't know/not sure/ missing was included to reduce the bias associated with the high rates of

failing to report income in the BRFSS (approximately 13% (weighted percent taken from BRFSS codebook) in 2004 and 2010).

Education was measured as did not graduate high school (coded as zero); graduated high school; attended college or technical school; or graduated from college or technical school.

Employment status was measured as employed (employed for wages; self-employed); unemployed (out of work for more than 1 year; out of work for less than 1 year) coded as zero; other (a homemaker; a student; retired; unable to work).

We included disability and diabetes status into our analysis. This reduces the effect of confounding due to the link between disease/disability status and race [186] (LeCook et al., p. 1240, 2012). Diabetes is more prevalent among Black and AIAN individuals than all other races (Office of Minority Health (a), 2013)[187,] (Office of Minority Health (b), 2013)[188]. Therefore, choosing this measure allows us to separate possible confounding for diabetes status among minority adults. We collapsed the responses for the variables disability and diabetes into binary outcomes. For diabetes, we collapsed the outcomes of the following answers into no: *yes, but female told only during pregnancy*; *no*; and *no, pre-diabetes or borderline diabetes*. In addition, we excluded those responses for the following: *don't know/not sure; refused; not asked or missing*. For disability we collapsed the responses into *yes* versus *no* (*not disabled*), while removing responses for *refused* and *don't know/not sure*. We include diabetes, as it is asked for all states throughout the study period.

We used county-level information to ascertain rurality. This was linked to our individual data via federal information processing standards codes (FIPS Codes) present

in both the BRFSS and the Area Resource File (ARF 2010-2011). Urban Influence Codes (UIC's) available in the ARF are used to identify rural/urban sub-groups. We specify UIC's at 1 or 2 as Urban, and 3-12 as Non-Urban (defined as rural in the current analysis). We treat this as a fixed effect at the person-level as this classification is the same for any individual within each county and does not vary within the county. Because BRFSS public use data suppress county identifiers for small counties, we also include "missing" as a non-interpretable category under rurality, to reduce data loss for multivariable analysis.

Contextual Control Variables

States differ in several socio-economic characteristics. Thus, measures of state socio-economic characteristics related to the Recession may serve as unmeasured confounders between states. We include two state-level characteristics in our Random coefficient logit models for fully-adjusted analysis.

Annual poverty rates, measured at the state-level (2010-2011) are included to improve comparisons across states (US Census Bureau, 2010-2011)[189]; (Urban Institute and Kaiser Commission on Medicaid and the Uninsured, 2012)[190]. The unemployment rate for states for 2004 - 2010 are included, which are derived from the Bureau of Labor Statistics Local Area Unemployment Rates for states (BLS (f), 2012)[191]. These two variables are measured at the state-level and these measures are time-varying by year.

Analysis

We present both bivariate and multivariate analysis. We used logistic regression (single-level and random coefficient models) to measure variation in our outcomes. Our

random coefficient models are presented beginning with table 6. Model fit indices are presented following each table for which models were estimated using Laplace Estimation to get AIC and BIC fit indices. Our final model (Model 4) is the best fitting model as compared to the preceding models for all outcomes ($p \leq .05$). Pseudo maximum likelihood estimation is used for model coefficients and standard errors (SE) presented in Table 4.1.5 We use Proc Glimmix for multi-level analysis with state as our level-two cluster. Model 1 includes our outcomes and Race, Time-Period and the interaction of Race by Time-Period. Model 2 adds to Model 1 pre-disposing and enabling factors based on our theoretical model adapted from the WHO's Conceptual Framework for Action on the Social Determinants of Health. Model 3 added to Model 2 need characteristics of disability and diabetes status to the model. Our final model, Model 4, included Model 3 covariates as well as state measured annual poverty rates and unemployment rates (varying by year and state) with state random intercepts (see Table 4.1.5).

Results

Population characteristics and Pre-Recession differences

Working-age adults tapped by the BRFSS were primarily White individuals followed by Black, Asian and AIAN individuals (see Table 4.1). Table 4.2 highlights race-based disparities in the social determinants of health for 2004, the beginning of the analysis period. Individuals identifying with the lowest income category (at below $15,000 annual income) included a low of 7.2% for Asian individuals, followed by White individuals (7.9%), African American or Black individuals (16.3%) and AIAN individuals (18.7%). American Indians also had the highest rates of identifying with the

lowest income category, followed by Black individuals (21.1% and 13.1%, respectively). American Indian or Alaska native individuals reported the highest rates of reporting lacking health insurance (29.3%) followed by Black individuals (23.7%) in comparison to White individuals and Asian Individuals (16.1% and 15.3%, respectively). The highest rates of reporting being unemployed, being disabled and having diabetes were among Black individuals and AIAN individuals (see Table 4.2).

Unadjusted estimates for the four key outcomes over time are presented in Table 4.3. The proportion of adults reporting fair or poor health remained close to 14% overall throughout the study period. In contrast, more than a third of individuals reported one or more poor physical health days (35.2%) or poor mental health days (37.1%) in the past 30 days. The percent reporting forgone medical care due to cost ranged from a low of 15.1% in both 2004 and 2006 to a high of 17.1% in 2009 (see table 4.3).

Table 4 presents unadjusted outcomes across all years under study (2004-2010). American Indian or Alaska Native and Black individuals were more likely to report fair or poor health status (versus good, very good or excellent) when compared to White individuals. American Indian or Alaska Native and Black individuals had the highest rates of reporting forgone medical care in the past 12 months due to cost. Asian individuals had the lowest rates of forgone medical care followed by White individuals.

American Indian or Alaska Native individuals reported the highest rates of reporting one or more poor mental health days (see Table 4.4). Black and White individuals had similar levels of reporting one or more poor mental health days. Asian

individuals had the lowest rates of reporting one or more poor physical health days followed by White, Black and AIAN individuals (see Table 4.4).

Adjusted analysis of change across the Recession period

Self-reported fair or poor health status: Prior to the Recession, all minority populations except Asian adults were more likely to report fair or poor health status than were White individuals. This disparity persisted in fully adjusted analysis and across the entire period of study (See Table 4.5 and Figure 4.1).The recession period, controlling for race and other individual characteristics, was associated with an overall decrease in reported poor health status for White adults, while the post-Recession was associated with an overall increase in poor or fair health among Black adults. When examining changes over time across populations (the interaction between race and time), the increase in the proportion of Black adults reporting fair/poor health after the Recession period was greater than that among White adults. No other race-based difference in changes associated with the 2004-2010 period were found.

Self-reported forgone medical care in the past 12 months due to cost: Overall, AIAN and Black individuals were more likely to report forgone medical care in the past 12 months due to cost across the entire period of study. In fully-adjusted analysis, Black individuals were more likely to report forgone medical care due to cost than White adults, which is consistent with unadjusted analysis (see Table 4.5 figure 4.2). The recession period, controlling for race and other individual characteristics, was associated with an overall increase in reported forgone medical care among White and Black adults, while the post-recession period did not differ from the pre-recession for White adults. When

examining changes over time across populations (the interaction between race and time), the increase in reporting forgone medical care in the past 12 months due to cost among Black individuals from before the Recession to the Recession was greater than the change among White individuals, after controlling for all other terms in the model. The increase in the rate reporting forgone medical care in the past 12 months due to cost among Black individuals was greater (greater 'Recession effect') than that among White individuals, after holding all other terms in the model constant.

The increased likelihood of reporting forgone medical care in the past 12 months due to cost among Black individuals from the Pre-Recession time-period to the Recovery time-period was greater than that among White individuals, after controlling for all other terms in the model. The 'Recovery effect' for Black individuals was not as 'strong' (i.e. drop in reporting forgone medical care in the past 12 months due to cost) as it was for White individuals, leaving a higher likelihood of Black individuals reporting forgone medical care in the Recovery. No other race-based difference in changes associated with the 2004-2010 period were found.

One or more poor mental health days: Overall, Asian and Black individuals were less likely to report one or more poor mental health days in the past 30 days in fully-adjusted analysis (see Table 4.5 and Figure 4.3). The Recession period, controlling for race and other individual characteristics, was associated with an overall increase in reported one or more poor mental health days among Black individuals, while the post-recession period did not differ from the pre-recession. The Recession period and the Recovery period were associated with an overall decrease in the likelihood of reporting one or more poor mental health days among Asian individuals, while the opposite was

measured among White individuals for both time comparisons (see Table 4.5). When examining changes over time across populations the increase in reporting one or more poor mental health days in the past 30 days (the interaction between race and time), among Black individuals from before the Recession to the Recession is different than the increase among White individuals, after controlling for all other terms in the model. We find the increase in the rate reporting one or more poor physical health days in the past 30 days among Black individuals in this time-period was greater (greater 'Recession effect') than the increase for White individuals in the same time-period, after controlling for all else in the model.

When examining changes over time across populations (the interaction between race and time), the decrease in reporting one or more poor mental health days among Asian individuals from before the Recession to the Recession is different than the increase in reporting one or more poor mental health days in the past 30 days among White individuals, after controlling for all other terms in the model. The same is true when comparing the time after the Recession to the time before the Recession among Asian adults when compared to White adults. No other race-based difference in changes associated with the 2004-2010 period were found.

<u>One or more poor physical health days:</u> Overall, Asian and Black and individuals were less likely to report one or more poor physical health days than White individuals, in fully-adjusted analysis (see Table 4.5 and Figure 4.4). American Indian or Alaska Native individuals were more likely to report one or more poor physical health days than White individuals, which is consistent with unadjusted analysis. The recession period, controlling for race and other individual characteristics, was associated with an overall

increase in reported one or more poor physical health days among White and Black adults, while the post-recession period was associated with an overall decrease from the pre-recession among White and Asian adults. When examining changes over time across populations (the interaction between race and time), the increase in reporting one or more poor physical health days in the past 30 days among Black individuals from before the Recession to the Recession was greater than that among White individuals, after controlling for all other terms in the model. Here, there was an increase for both Black and White individuals in the rate reporting one or more poor physical health days in the past 30 days in this time-period, however, the increase among Black individuals was greater (greater 'Recession effect'), after controlling for all other terms in the model.

When examining changes over time across populations (the interaction between race and time), the increase in reporting one or more poor physical health days in the past 30 days among Black individuals from before the Recession to the Recovery was different than the decrease among White individuals, after controlling for all other terms in the model. Here, the decrease in the rate reporting one or more poor physical health days in the past 30 days in this time period among White individuals was greater ('Recovery effect') than the increase of change among Black individuals (no 'Recovery effect').

The decrease in reporting one or more poor physical health days in the past 30 days among Asian individuals from before the Recession to the Recovery was different than the decrease in reporting one or more poor physical health days in the past 30 days among White individuals, after controlling for all other terms in the model. We find the 'Recovery effect' (decrease in reporting one or more poor physical health days) was

greater for Asian individuals than White individuals, after controlling for all other terms in the model. No other race-based difference in changes associated with the 2004-2010 period were found.

Discussion

There were differential effects across racial groups when compared to the Pre-Recession time period of 2004-2007 with regard to self-reported health status, reporting forgone medical care in the past 12 months due to cost, reporting one or more poor physical health days and reporting one or more poor mental health days.

The Great Recession burdened the already burdened with regard to our outcomes present in this analysis. Individuals suffering from economic struggles, lower education and lower incomes faced added struggles during the Recession and in some cases into the economic Recovery.

In most cases Black individuals and AIAN individuals experienced greater disparities in self-reported health status, reporting forgone medical care due to cost and reporting one or more poor physical health days in the past 30 days. This is consistent throughout the study period. Our analysis of Asian individuals provides mixed results. We find that Asian individuals may be less susceptible to the Great Recession as measured though the current analysis.

Our outcomes measure different aspects of health (one measure of health care utilization and 3 measures of health). As such, we cannot expect our results to be the same for every measure included in the current analysis. In particular, self-reported forgone medical care in the past 12 months due to cost is most likely to be sensitive to

economic downturns and provides a meaningful measure of the effects of the Recession, as seen in Figure 4.1.2. Differences in forgone medical care across the Recession are consistent with previous research that identifies drops in utilizing medical services among minority and White adults including visits to physicians and inpatient visits (Mortensen and Chen, 2013)[192].

Differences in predisposing, enabling and need characteristics for health care remained after controlling for all other terms in the model. Key social determinants of health including race, sex, income, education, health insurance status, age, employment status and location factors including rurality, state poverty rates and state unemployment rates affect the degree to which individuals were burdened during the Great Recession. These factors align with our theoretical framework designed from the WHO's Conceptual Framework for Action on the Social Determinants of Health. As such, we find that these social determinants of health are integral to reporting fair or poor health status and when considered may account for a large portion of the variation in reporting fair or poor health status.

Our analysis adjusts for spatiotemporally clustered events (separated into three periods, pre-Recession, Recession & Recovery) and across seven years of study. Identifying potential sources for clusters of events is a common theme in epidemiological investigations (Cromley, 2002)[193]. However, we include potential environmental/contextual factors for their potential moderating effect on the outcomes of interest. This approach allows us to assess questions such that we account for the non-independent nature of individuals nested in groups (Diez Roux, 2002). In addition, we have included several years of observation leading up to the Recession in an attempt to

improve our 'inferential power' regarding our conclusions (Shadish et al., p. 484, 2002)[194].

Moving forward, researchers must identify policies that may serve to lessen the burden of economic downturns. Investigations into state policies should be conducted to determine what if any safety nets or coverage options may make a difference for individuals suffering throughout these economic times. In particular, investigations into whether or not differences Medicaid policies for individuals including parents and historically uncovered childless adults make a difference in these outcomes for individuals throughout this time period are suggested.

The passing of the Affordable Care Act includes plans to expand Medicaid eligibility to millions of vulnerable individuals, as measured through annual income levels. Understanding if and how such state policies affect vulnerable individuals' merits further research.

Limitations

The strength of using the BRFSS data is in the ability to identify race/ethnicity into more than the widely used White, Black, Hispanic and other. Using data from 2004-2010, allows us to identify trends across time. This includes a period spanning before the Recession, up to the Recession, during and into the economic recovery. This allows us to identify differences between race/ethnicity and within race across rurality. Our data contain unlinked individuals (not the same across time as with a longitudinal design); however, our purpose is to measure the change in racial/ethnic groups and not specific individuals. Individuals are linked (non-independence) by race and ethnic categories or

sub-groups. We measure the change in the average measures for sub-groups of each race/ethnicity identified.

The data used in this analysis is cross-sectional in nature, however we used several consecutive years of data to identify trends across time. In addition, the data cannot be linked from year to year based on the same individuals. Identifying change over time for specific persons is outside the scope of this analysis. However, the objective was to assess changes in estimates for racial and ethnic groups and not specific individuals over time.

Conclusions

Differential effects of the Great Recession were measured among minority and White adults, however this is only part of the picture. Understanding what happened to millions of Americans throughout the study period is a critical step in the process of understanding what may help close this gap between minority and White adults. The Affordable Care Act (2010) has measures built into it that may benefit millions of vulnerable individuals in need of medical care, but who may forgo such care due to cost. Understanding whether more generous Medicaid eligibility for working age adults may lessen accessibility gaps in medical care remains to be seen. Furthermore, the importance of having safety net providers and/or paths to medical insurance for vulnerable individuals losing employer-sponsored health insurance (i.e. Medicaid) during economic downturns (Felland et al., 2011)[195] is in need or further study.

Table 4.1. Characteristics of working age adults, BRFSS 2004 – 2010, after deleting observations with missing data for race, sex, education, insurance status, employment status, diabetes status and disability status.

	2004 % (SE)	2005 % (SE)	2006 % (SE)	2007 % (SE)	2008 % (SE)	2009 % (SE)	2010 % (SE)	Total % (SE)
Total	224,483	259,551	254,735	295,545	282,173	282,826	286,833	1,886,146
	5.5% (0.12)	14.0% (0.051)	14.3% (0.057)	14.3% (0.053)	14.7% (0.053)	14.4% (0.052)	14.6% (0.047)	100%
Race								
White	185,395	213,013	207,766	242,618	231.761	233,298	237,653	1,551,504
	78.3% (0.187)	77.5% (0.178)	76.5% (0.206)	76.1% (0.192)	76.3% (0.186)	78.0% (0.183)	78.7% (0.164)	77.3% (0.071)
Black	22,308	23,745	24,025	26,588	26,051	26,676	27,786	177,179
	11.3% (0.131)	11.1% (0.128)	10.6% (0.136)	11.0% (0.136)	11.3% (0.130)	11.8% (0.142)	11.4% (0.120)	11.2% (0.050)
Asian	2,943	5,303	5,003	5,696	5,749	6,298	6,537	37,529
	2.8% (0.093)	3.0% (0.085)	3.0% (0.097)	3.6% (0.102)	3.4% (0.092)	3.9% (0.101)	4.2% (0.097)	3.4% (0.036)
AIAN	4,718	5,669	5,117	5,978	5,599	5,769	5,993	38,843
	2.0% (0.079)	1.8% (0.063)	1.8% (0.071)	1.8% (0.061)	1.8% (0.059)	1.8% (0.056)	2.0% (0.061)	1.9% (0.024)
Other	9,119	11,821	12,824	14,665	13,013	10,785	8,864	81,091
Weighted	5.5% (0.109)	6.6% (0.112)	8.0% (0.148)	7.6% (0.128)	7.2% (0.129)	4.5% (0.096)	3.7% (0.080)	6.2% (0.044)

Note: Analysis is weighted for the complex sampling frame of the BRFSS

Table 4.2. Race-based differences in determinants of health status and health use, working age adults, 2004 BRFSS

	White	African American	Asian	AI/AN	Other
	% (SE)	% (SE)	% (SE)	% (SE)	% (SE)
Sex					
Male	49.7% (0.002)	45.8% (0.006)	55.2% (0.016)	58.2% (0.018)	54.6% (0.010)
Female	50.3% (0.002)	54.2% (0.006)	44.8% (0.016)	41.8% (0.018)	45.4% (0.009)
Age					
19 - 43	57.5% (0.002)	64.1% (0.006)	72.0% (0.014)	63.1% (0.018)	76.2% (0.008)
44 - 64	42.5% (0.002)	35.9% (0.006)	28.0% (0.014)	36.9% (0.018)	23.8% (0.008)
Income					
Missing/Don't Know	10.6% (0.002)	11.6% (0.004)	11.2% (0.010)	8.8% (0.010)	15.0% (0.007)
< $15,000	7.9% (0.002)	16.3% (0.005)	7.2% (0.009)	18.7% (0.018)	16.6% (0.008)
$15 – 25,000	12.3% (0.002)	21.6% (0.005)	11.7% (0.011)	22.0% (0.016)	24.4% (0.009)
$25 – 35,000	10.5% (0.001)	14.9% (0.004)	10.3% (0.011)	14.5% (0.013)	12.4% (0.007)
$35 – 50,000	15.2% (0.002)	13.7% (0.004)	11.9% (0.010)	12.7% (0.011)	12.3% (0.007)
>$50,000	43.4% (0.002)	21.8% (0.005)	47.6% (0.017)	23.4% (0.016)	19.3% (0.008)
Education					
Some High School	9.5% (0.002)	13.1% (0.004)	2.9% (0.006)	21.1% (0.017)	32.2% (0.010)
High School Graduate	28.5% (0.002)	35.6% (0.006)	12.7% (0.011)	34.8% (0.019)	26.3% (0.009)
Some College	27.4% (0.002)	29.4% (0.006)	19.9% (0.014)	28.7% (0.017)	21.1% (0.008)
College Graduate	34.6% (0.002)	22.0% (0.005)	64.5% (0.016)	15.3% (0.013)	20.5% (0.008)
Insurance					
Not Insured	16.1% (0.002)	23.7% (0.005)	15.3% (0.012)	29.3% (0.016)	39.0% (0.010)
Insured	83.9% (0.002)	76.3% (0.006)	84.7% (0.013)	70.7% (0.017)	61.0% (0.010)
Employment					

Unemployed	5.47% (0.001)	11.3% (0.004)	7.8% (0.010)	8.8% (0.011)	8.6% (0.006)
Neither Employed or Unemployed	22.3% (0.002)	22.5% (0.005)	23.8% (0.015)	26.8% (0.019)	22.7% (0.008)
Employed	72.2% (0.002)	66.2% (0.006)	68.4% (0.016)	64.4% (0.019)	68.6% (0.009)
Rurality					
Metro	70.3% (0.002)	79.9% (0.004)	92.1% (0.008)	68.8% (0.016)	76.3% (0.008)
Non-metro	7.9% (0.001)	5.7% (0.002)	1.4% (0.002)	11.2% (0.006)	4.7% (0.002)
Data suppressed	21.8% (0.002)	14.4% (0.004)	6.5% (0.008)	20.1% (0.014)	19.1% (0.008)
Disability					
Disabled	15.4% (0.002)	15.4% (0.004)	6.0% (0.007)	23.2% (0.016)	11.6% (0.006)
Not Disabled	84.6% (0.002)	84.7% (0.004)	94.0% (0.007)	76.8% (0.016)	88.4% (0.006)
Diabetes					
Diabetes	4.9% (0.001)	8.0% (0.003)	3.6% (0.006)	7.9% (0.009)	5.3% (0.005)
No Diabetes	95.1% (0.001)	92.0% (0.003)	96.4% (0.006)	92.1% (0.009)	94.7% (0.005)

Other indicates No preferred race, multiracial but preferred race not asked and Native Hawaiian or other Pacific Islander.AIAN indicates American Indian/Alaska Native Note: Analysis is weighted for the complex sampling frame of the BRFSS

Table 4.3. Self-reported health status, physical health days, mental health days and foregone care among working age adults 2004 – 2010 BRFSS.

Percent of respondents reporting:	2004 % (SE)	2005 % (SE)	2006 % (SE)	2007 % (SE)	2008 % (SE)	2009 % (SE)	2010 % (SE)	Total % (SE)
Fair, poor health status	13.8% (0.001)	14.2% (0.001)	13.9% (0.001)	14.3% (0.001)	14.0% (0.001)	13.9% (0.001)	14.0% (0.001)	14.0% (0.001)
One or more poor physical health days	34.9% (0.002)	35.6% (0.002)	35.0% (0.002)	34.9% (0.002)	35.9% (0.002)	35.7% (0.002)	34.8% (0.002)	35.2% (0.001)
One or more poor mental health days	37.6% (0.002)	36.8% (0.002)	37.4% (0.002)	36.8% (0.002)	37.1% (0.002)	37.0% (0.002)	36.9% (0.002)	37.1% (0.001)
Forgoing care due to cost	15.1% (0.001)	15.4% (0.001)	15.1% (0.001)	15.4% (0.001)	16.0% (0.001)	17.1% (0.001)	16.8% (0.001)	15.9% (0.001)

Note: Analysis is weighted for the complex sampling frame of the BRFSS

Table 4.4. Unadjusted Odds Ratios for outcomes 2004-2010, among working age adults (age 18-64)

RACE (Referent: White)	Estimated percent reporting	Coefficient	Standard Error	Odds Ratio	Lower Confidence Limit for Odds Ratio	Upper Confidence Limit for Odds Ratio
Fair or poor self-reported health status						
White (referent)	12.59					
Other	21.95*	0.375	0.017	1.952	1.884	2.023
AIAN	24.88*	0.538	0.026	2.298	2.165	2.440
Asian	8.07*	-0.790	0.030	0.609	0.566	0.655
Black	18.68*	0.172	0.014	1.595	1.554	1.636
Foregone Medical Care						
White (referent)	14.15					
Other	24.84*	0.357	0.017	2.006	1.935	2.078
AIAN	24.65*	0.347	0.026	1.985	1.870	2.108
Asian	11.88*	-0.540	0.030	0.818	0.762	0.878
Black	21.59*	0.175	0.014	1.671	1.630	1.714
Poor Mental Health Days						
White (referent)	37.54					
Other	33.75*	-0.111	0.015	0.848	0.820	0.876
AIAN	44.35*	0.336	0.022	1.326	1.258	1.398
Asian	29.22*	-0.322	0.020	0.687	0.655	0.720
Black	37.30	0.044	0.011	0.990	0.969	1.011

Poor Physical Health Days						
White (referent)	35.49					
Other	32.52*	-0.104	0.015	0.876	0.848	0.905
AIAN	42.94*	0.342	0.022	1.368	1.298	1.441
Asian	27.95*	-0.321	0.021	0.705	0.672	0.740
Black	36.08*	0.054	0.011	1.026	1.005	1.048

*indicates p-value ≤.05 different from White
Other indicates No preferred race, multiracial but preferred race not asked and Native Hawaiian or other Pacific Islander
AIAN indicates American Indian/Alaska Native
Note: Analysis is weighted for the complex sampling frame of the BRFSS

Table 4.5. Change in health services use and health outcomes among working age adults across the Recession period, adjusted analysis, 2004 – 2010 BRFSS

	Fair/Poor Health Status		**Foregone medical care**		**1+ poor mental health days**		**1+ poor physical health days**	
Intercept	**-4.386**	0.100	**-3.450**	0.130	**-0.615**	0.098	**-0.971**	0.062
Fixed Effects								
Race								
AIAN	**0.350**	0.020	0.021	0.019	0.010	0.015	**0.055**	0.016
Asian	**0.308**	0.030	-0.016	0.028	**-0.351**	0.017	**-0.202**	0.018
Black	**0.255**	0.011	**0.027**	0.010	**-0.217**	0.008	**-0.084**	0.008
White (ref.)	---	.	---	.	---	.	---	.
Time Period								
Pre (ref.)	---	.	---	.	---	.	---	.
During	**-0.055**	0.012	**0.050**	0.008	**0.013**	0.005	**0.014**	0.005
Post	-0.014	0.008	0.021	0.011	**0.016**	0.008	**-0.060**	0.008
Time-Period*Race								
Pre*White	---	.	.	---	---	.	---	.
During*White	---	.	.	---	---	.	---	.
Post *White	---	.	.	---	---	.	---	.
Pre *AIAN	---	.	---	.	---	.	---	.
During*AIAN	-0.050	0.033	-0.027	0.032	0.028	0.025	-0.007	0.026
Post*AIAN	0.057	0.041	0.003	0.040	0.041	0.032	0.021	0.033
Pre *Asian	---	.	---	.	---	.	---	.
During*Asian	-0.027	0.046	0.042	0.045	**-0.066**	0.028	-0.008	0.028
Post*Asian	-0.023	0.056	0.088	0.053	**-0.071**	0.034	**-0.070**	0.035
Pre *Black	---	.	---	.	---	.	---	.
During*Black	0.017	0.018	**0.083**	0.016	**0.033**	0.013	**0.030**	0.013
Post*Black	**0.062**	0.022	**0.074**	0.020	0.029	0.016	**0.037**	0.017
Model Fit Statistics for Self-reported Health Status								

Fit Indices	Model 2	Model 3	Model 4
-2 Log Likelihood	1313297	1114876	1095846
AIC (smaller is better)	1313359	1114942	1095916
AICC (smaller is better)	1313359	1114942	1095916
BIC (smaller is better)	1313419	1115006	1095984
CAIC (smaller is better)	1313450	1115039	1096019
HQIC (smaller is better)	1313382	1114966	1095942
Model Fit Statistics for Self-reported Forgone Medical Care			
Fit Indices	Model 2	Model 3	Model 4
-2 Log Likelihood	1280024	1230230	1214504
AIC (smaller is better)	1280086	1230296	1214574
AICC (smaller is better)	1280086	1230296	1214574
BIC (smaller is better)	1280146	1230360	1214642
CAIC (smaller is better)	1280177	1230393	1214677
HQIC (smaller is better)	1280109	1230321	1214600
Model Fit Statistics for One or More Poor Mental Health Days			
Fit Indices	Model 2	Model 3	Model 4
-2 Log Likelihood	2350894	2256333	2234382
AIC (smaller is better)	2350956	2256399	2234452
AICC (smaller is better)	2350956	2256399	2234452
BIC (smaller is better)	2351017	2256464	2234520
CAIC (smaller is better)	2351048	2256497	2234555
HQIC (smaller is better)	2350980	2256424	2234478
Model Fit Statistics for One or More Poor Physical Health Days			
Fit Indices	Model 2	Model 3	Model 4
-2 Log Likelihood	2355771	2160566	2136983
AIC (smaller is better)	2355833	2160632	2137053
AICC (smaller is better)	2355833	2160632	2137053
BIC (smaller is better)	2355893	2160697	2137121
CAIC (smaller is better)	2355924	2160730	2137156
HQIC (smaller is better)	2355856	2160657	2137079

Note: Bolded type face indicates significant ≤ .05 (p-value)

Fully-adjusted analysis controls for sex, age, income, education, insurance status, employment, rurality, disability, diabetes status, random state intercept, state poverty rate and state unemployment rate, the interaction of race by recession time-period.
Note: Standard errors are rounded to the nearest thousandth, none are true zeros.
Intra-class correlation coefficient (ICC) calculated from models with only our outcomes of interest (without right side variables).
Fair or Poor Health: 0.09324 / (0.09324 + 3.29) = 0.03. Therefore, 3% of the variation in our outcomes is explained by variation between states.
Forgone Medical Care: 0.08080 / (0.08080 + 3.29) = 0.02. Therefore, 2% of the variation in our outcomes is explained by variation between states.
Poor Mental Days: 0.01514 / (0.01514 + 3.29) = 0.01. Therefore, 1% of the variation in our outcomes is explained by variation between states.
Poor Physical Days: 0.009306 / (0.009306 + 3.29) = 0.003. Therefore, 0.3% of the variation in our outcomes is explained by variation between states.

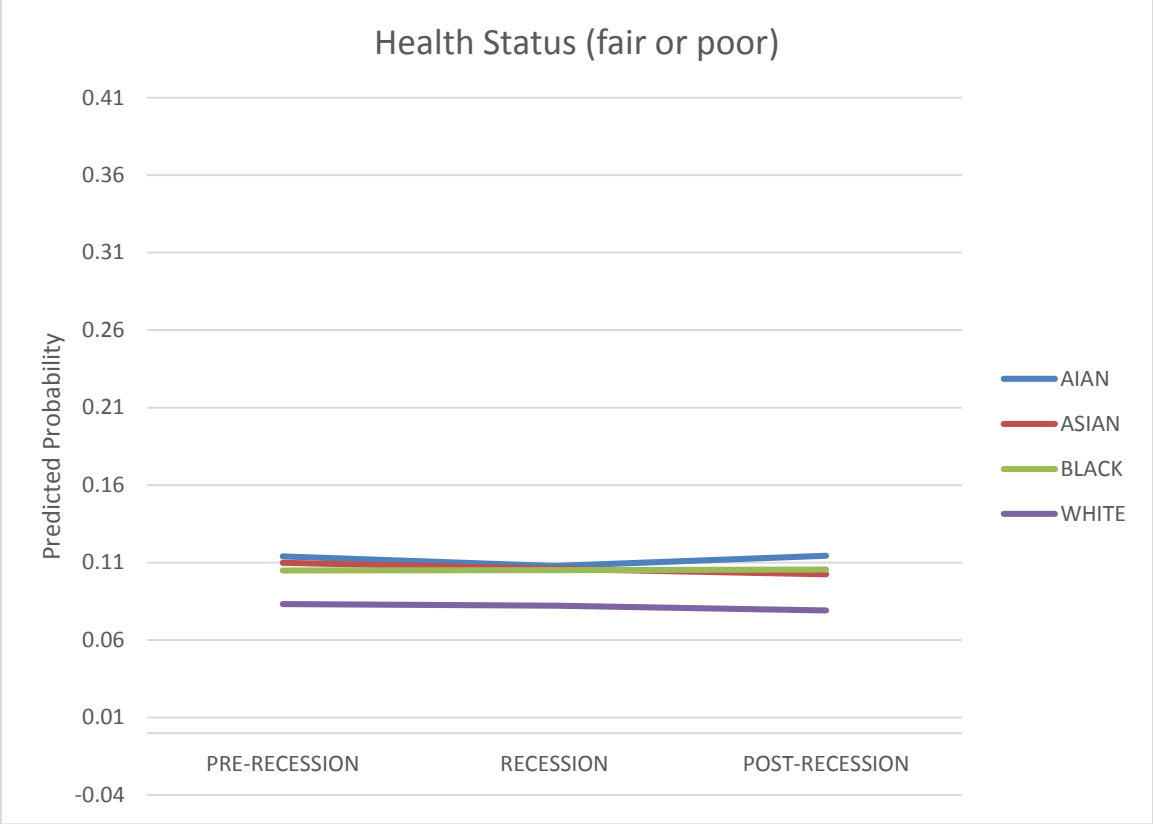

Figure 4.1. Predicted probabilities for the interaction of race by time for self-reported health status from the fully-adjusted analysis.

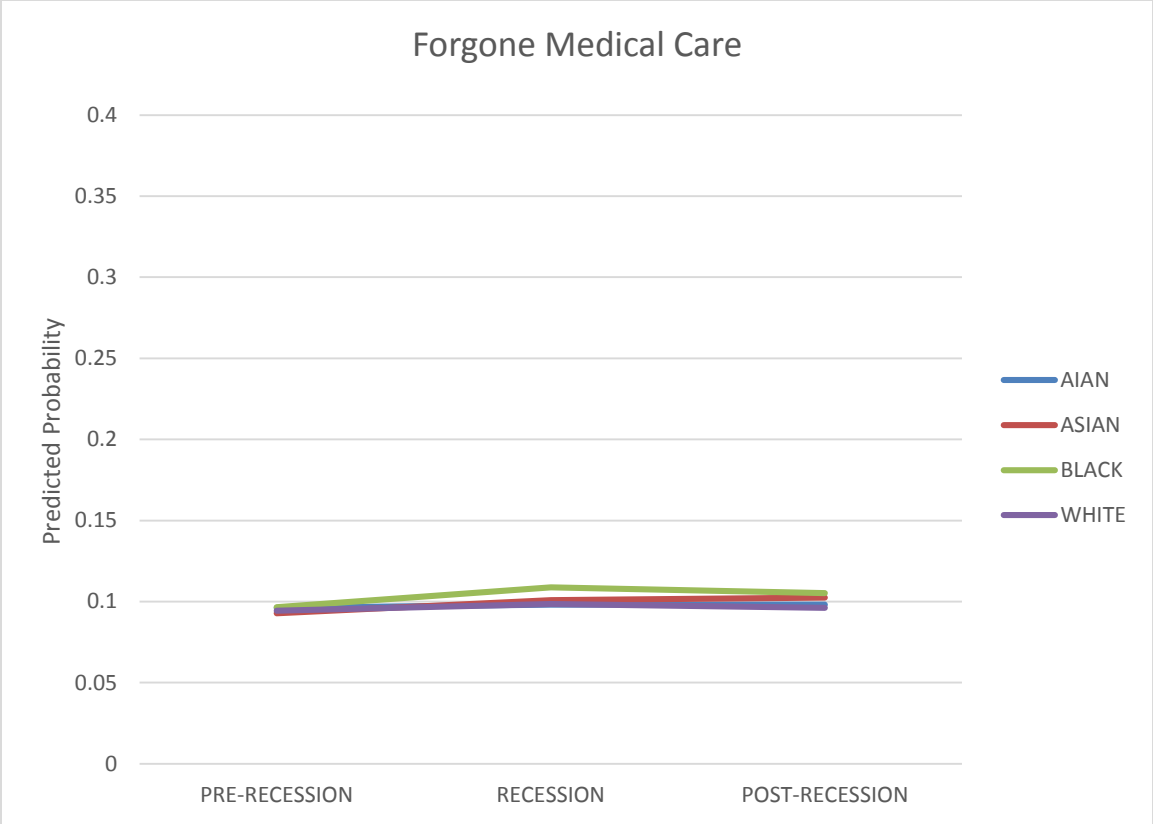

Figure 4.2. Predicted probabilities for the interaction of race by time for self-reported forgone medical care in the past 12 months from the fully-adjusted analysis.

Figure 4.3. Predicted probabilities for the interaction of race by time for reporting one or more poor mental health days in the past 30 days from the fully-adjusted analysis.

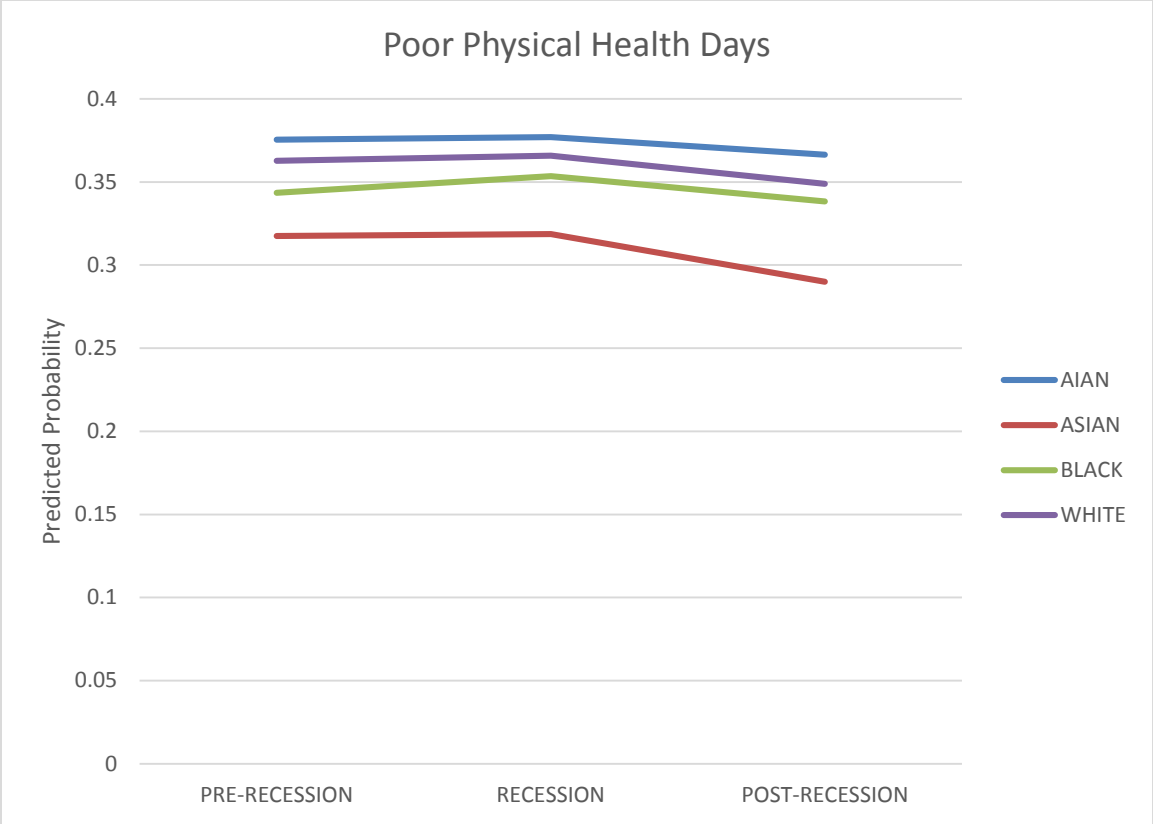

Figure 4.4. Predicted probabilities for the interaction of race by time for reporting one or more poor physical health days in the past 30 days from the fully-adjusted analysis.

Section 4.2

Paper 2 Title:

STATE MEDICAID GENEROSITY DURING THE GREAT RECESSION[1]

[1] Towne SD, Probst JC, Hardin JW, Bell B, Glover S. 2013. To be submitted to the Journal of the Poor and Underserved.

Abstract

Medicaid eligibility measured in relation to the percent of the federal poverty level differs by states for parents of dependent children and childless adults (who are historically not qualified for Medicaid under Federal regulations). We measured differences in Medicaid Generosity (i.e. differences in eligibility based on income defined in relation to the percent of the federal poverty level) were associated with differences in self-reported health status, cost-related forgone medical care in the past 12 months, the number of poor mental health days in the past 30 days (one or more versus none), and the number of poor physical health days in the past 30 days (one or more versus none). We found differences in state Medicaid Generosity was associated with differences in our outcomes for working aged non-institutionalized adults living in the US between 2004 and 2010. In addition, differences in outcomes were more severe among different racial minority groups.

Introduction

Having safety nets in place for vulnerable populations can reduce some effects of an economic downturn such as the recent Great Recession (Gonzales et al., 2012)[196] Vulnerable populations are those that would likely be burdened by medical expenses due to economic strains (i.e. low financial resources) that may prevent seeking care when needed (Cummingham et al., 2008)[197].

Government-sponsored programs focusing on vulnerable populations include Medicaid. Medicaid coverage is provided to 31 million children, finances births for pregnant woman (40% of all births), and provides health care coverage for 4.6 million low-income seniors and 3.7 million people with disabilities who are also enrolled in Medicare; which is different than the number of disabled covered under Medicaid only (Medicaid.gov, 2012)[198]. Finally, there are the 11 million non-elderly low–income individuals and the 8.8 million non-elderly individuals with disabilities with Medicaid coverage (Medicaid.gov, 2012). Many more individuals, possibly those losing employer-sponsored health insurance during the Great Recession, may be eligible for Medicaid if eligibility limits are more generous within states. Exploring the link between lacking health insurance and health and health care utilization outcomes underlines the importance of having health care coverage.

Lack of health insurance is related to differences in health care utilization. Using information collected in 1994 researchers compared Medicaid recipients to uninsured individuals among persons (under the age of 65) in fair or poor health. They found that persons without health insurance were “less likely to have a usual source of care” when

compared to those enrolled in Medicaid (Berk, p.172, 1998)[199]. Similar findings were reported for obtaining "one or more of the health care services" individuals (under the age of 65) surveyed "believed they needed during the previous year," where a larger percent of individuals without health insurance (34%) reported this barrier than those with Medicaid coverage (22%) (Berk, p.172-173, 1998).

State-Level Medicaid Policies

State Medicaid policies play an important role in individual health status for vulnerable populations. Medicaid varies in the benefits provided by states within the US (Ferguson et al., 2009)[200] States can use Section 1115 waivers to expand Medicaid to individuals not previously eligible for coverage, including childless adults (Natoli et al., 2011);(Borck et al., 60, 2012)[201]. States vary in the program eligibility implemented under 1115 waivers. This variation includes income eligibility criteria based on percent of Federal Poverty Levels (FPLs) and the benefits provided (i.e. equivalent to Medicaid or more limited coverage) (Natoli et al, 2011). For example, the District of Columbia used 1115 waivers to expand coverage (equivalent to Medicaid) to adults aged 50-64 below 50% of the FPL, while Utah expanded coverage (for "primary and preventive care only") to adults over 19 with incomes below 150% of the FPL (Natoli et al., p. 2, 2011).

Medicaid expansion has been associated with decreases in mortality rates for individuals in states that expanded eligibility to include those not previously eligible (Sommers, 2012). Medicaid expansion is associated with decreases in mortality among minority adults and those in poor counties (Sommers et al., 2012). In 2008, approximately 6 million adults were currently enrolled in Medicaid through Section 1115

Expansion Enrollment, representing 37% of all Medicaid-covered adults (Borck et al., 2012); (The Medicaid Analytic Extract 2008 Chartbook Appendix Tables For Chapter 7, p. 107, 2012)[202] Childless adults in states expanding Medicaid through Section 1115 waivers were 38 to 46 years of age on average in 2007 (Natoli et al, 2011).

Medicaid Generosity, broadening eligibility above the Federal minimum to include individuals not previously eligible, has been associated with declines in mortality [203](Sommers, 2012). New Medicaid enrollees under Section 1115 Medicaid Waivers (newly eligible related to changes in eligibility based on income category), were more likely to be older, minorities and those in poorer health than the general population (Sommers, 2012); [204](Natoli, 2011). These newly eligible include many vulnerable individuals.

Medicaid coverage may play an important role among vulnerable minority populations, especially those suffering from socio-economic disparities including lacking health insurance (Mead, et al., p. 55, 2008)[205]; (DeNavas-Walt et al., 2010)[206]; (US Census Bureau, 2011)[207]; (US Census Bureau, 2011)[208]; having lower educational attainment among adults (Glover et al, 2004)[209]; (Ryan & Siebens, p. 5, 2012)[210]; (Liao et al, 2011)[211] having lower health literacy (Kutner et al, 2006)[212] and higher poverty rates (DeNavas-Walt et al., 2011)[213] when compared to White individuals.

Other vulnerable individuals include children of parents covered under Medicaid. The insurance status of parents can play a role in the insurance status of children (Dubay & Kenney , 2003)[214]; (Schwartz, 2007)[215];(Singh et al., 2009)[216]. Some states define a

more generous level of eligibility for parents than other states to ensure that children are enrolled.

The Great Recession

The sustained economic downturn of December 2007 – June 2009 is also known as the Great Recession (hereafter, the Recession) (BLS (a), 2012)[217]. In the US, the annual average unemployment rate (civilian labor force 16 years and over) fluctuated from 6.0% in 2003, 5.5% in 2004, 5.1% in 2005, to a low of 4.6% for both 2006 and 2007; while rising dramatically in 2009 to 9.3% reaching a high of 9.6% in 2010 and finally dropping to 8.9% in 2011 (BLS (b), 2012)[218]. As of December 2012, the national unemployment rate had fallen to 7.7% (BLS (c), 2012)[219].

Previous research has suggested an association between economic downturns and health behaviors (Ruhm, 2005)[220]. Changes in the employment rate have been associated with changes in smoking, excess weight gain, and physical activity; all of which have strong ties to health (Ruhm, 2005). Other evidence suggest changes in alcohol consumption during the Recession, with higher rates of binge drinking measured during the Recession than before (Bor et al., 2013)[221]. In addition, the loss of employment includes the loss of employer-sponsored health insurance, with losses being more likely among low income workers (Collins, 2011)[222]. Mortgage debt (Alley et al., 2011)[223] and unemployment (Deaton, 2012)[224] have been associated with psychological stress, while home foreclosure has been associated with prescription non-adherence due to cost (Pollack & Lynch, 2009)[225].

Study Purpose

As of July 2012, at least 13 states were planning to cut Medicaid in an attempt to balance budgets (Galewitz, 2012)[226]; (Kaiser Health News, 2012)[227]. Decision makers must have the best available evidence to inform policy at the state and local level concerning Medicaid coverage for vulnerable adults. Thus, the purpose of the present study is to estimate the extent to which state-level Medicaid differences in eligibility, defined as the Percent of Federal Poverty (FPL) for parents and childless adults, are associated with changes in population health measures across time.

Methods

Theoretical Framework

The study uses a modified version of the Conceptual Framework for Action on the Social Determinants of Health to design our theoretical framework (research questions, variables chosen and statistical analysis) (Solar & Irwin, 2010)[228]. We focus on structural determinants, intermediary determinants and impacts on equity in health and well-being. Structural determinants include public policy, which in our study includes Medicaid Generosity. Structural determinants also include socioeconomic position, social class, gender, ethnicity, education, occupation and income (the current study includes sex, income level, race, education, employment, insurance status and age). Intermediary determinants include material circumstances (rurality, poverty rate and unemployment rate were used in our analysis) and behavioral and biological factors (disability and diabetes status were used in our analysis). The impact on equity in health and well-being measured in our study include self-reported health status (general health status, one or

more poor mental health days and one or more poor physical health days) and access to care (forgone medical care in the past 12 months due to cost).

Population studied

Our study population consisted of working aged (18-64) non-institutionalized adults living in the United States from 2004 – 2010. Our individual level information came from the Behavioral Risk Factor Surveillance System (BRFSS). The BRFSS is an annual telephone health survey that obtains information across the US on a variety of health topics including perceived health status, employment status and income-level. The BRFSS was established by the Centers for Disease Control and Prevention (CDC) and data are publicly available on the CDC's website [229](Centers for Disease Control and Prevention, 2010). The BRFSS data are used to conduct evaluations of public health programs and policies to improve the quality of life of US residents [230](Li et al., 2011). The unit of observation in the BRFSS is the individual adult.

The raw number of observations in the BRFSS public use data sets ranged from 303,822 for 2004 to 451,075 for 2010 (Centers for Disease Control and Prevention, 2000-2011)[231]. We restrict our sample to those aged 18-64, leaving 204,053 for 2004, 232,524 for 2005, 226,517 for 2006, 266,340 for 2007, 252,903 for 2008, 255,943 for 2009 and 255,461 for 2010. Our final sample size consisted of 1,886,146 observations after deleting observations for missing control variables (sex, education, insurance status, employment status, rurality, diabetes status, disability status and race).

Dependent Variables

Our dependent variables were taken from the BRFSS data. These include self-reported health status (fair or poor versus good, very good or excellent), forgone medical care (any time in the past 12 months when you didn't see a doctor because of cost), poor mental health days (one or more days in the past 30 when your mental health was not good versus none), poor physical health days (one or more days in the past 30 when your physical health was not good versus none).

Independent Variables

Medicaid Generosity is an independent state-level variable for our study, defined as the degree to which states extend coverage to non-pregnant, non-disabled adults. Medicaid eligibility rules are complex, with most states distinguishing between childless adults and those with children, and between working and non-working adults in both categories. Eligibility levels for parents remain similar within states across time, however eligibility for childless adults was not constant across the entire period under study. Furthermore, eligibility levels among states with any coverage for childless adults does not change throughout the study period, however, whether a state provides coverage or not does change. All but two states had Medicaid coverage or not for childless adults by 2005 (as defined in the current study).

Multiple sources were consulted to ascertain state Medicaid coverage, the basis for characterizing Medicaid Generosity (Somers et al., p. 13, 2010) [232]; (Artiga et al., 2010)[233]; (Natoli, p. 2, 2011); (Artiga & Schwartz, 2009)[234]; (1115 Details for Massachusetts, 2013)[235]; (1115 Details for Hawaii, 2013)[236]; (1115 Details for Iowa,

2013)[237]; (1115 Details for Maryland, 2013)[238]; (1115 Details for New Mexico, 2013)[239];(1115 Details for New York, 2013)[240] (NCSL, 2013)[241];(Ross & Cox, et al., 2003)[242]; (Ross & Cox, 2004)[243];(Ross & Cox, 2005)[244];(Ross & Cox, 2007)[245];(Ross & Horn, 2008)[246];(Ross, 2009)[247] Operational definitions of Medicaid Generosity are separated into two separate measures, which are used in separately equations (i.e. the equations for Medicaid Generosity only measure parents (MG-Parents) or childless adults (MG-Childless adults), these are never combined in the same model).

3. Adults without dependent children (See Figure 4.5a)
    a. No coverage for Adults. As of 2010, thirty-six (36) states and the District of Columbia provided no coverage for non-pregnant, non-disabled adults without dependent children.
    b. Coverage for adults with eligibility defined as ≥133% of the FPL. As of 2010, seven (7) states offered this coverage.
    c. Coverage for adults with eligibility defined as < 133% of the FPL. As of 2010, seven (7) states offered coverage at this level.

Because of variations in availability of past year data, Medicaid generosity was calculated separately for working parents and non-working parents for 2004, 2005, 2006, 2007; has missing data on generosity for parents, 2008 & 2009; and is calculated with no separation for working status for 2010). The resulting categories

Parents of dependent children (See Figure 4.5b)

    d. Coverage eligibility defined as ≥ the upper quartile (≥ 100% FPL) based on each year of data (note: 100% FPL is ≥ the upper quartile for

2004-2009). As of 2010, twenty-four (24) states and the District of Columbia fit this definition.

e. Coverage eligibility defined as < the upper quartile (< 100% FPL) based on each year of data (calculated separately for working parents and non-working parents for 2004, 2005, 2006, 2007 has missing data on generosity for parents, 2008 & 2009; calculated with no separation for working status for 2010). As of 2010, twenty-six (26) states fit this definition.

Individual-level Independent Variable

Our independent variable at the individual-level was race. Race was taken from the preferred race category in the BRFSS including: White; Black or African American; Asian; and American Indian or Alaska Native. Persons categorized by the BRFSS as "Other," which includes No Preference; Multiracial but preferred race not asked; and Native Hawaiian or Other Pacific Islander; were excluded, as the combination of so many different subcategories is difficult to interpret.

State Control Variables

State socio-economic characteristics vary across states and by year. We specify differences between states across socio-economic indicators to limit possible confounding related to state variations in employment and poverty. Our state-level controls include the unemployment rate and percent poverty treated as continuous variables, which are both time varying and vary by state (US Census Bureau, 2010-

2011)[248]; (Urban Institute and Kaiser Commission on Medicaid and the Uninsured, 2012)[249]; (BLS (f), 2012)[250].

Individual Control Variables

We included individual-level control variables to reduce the amount of confounding associated with differences in the following variables defined through the BRFSS codebook: insurance status (Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare, or Indian Health Service?), employment status (employed for wages or self-employed; out of work for more than 1 year or Out of work for less than 1 year; while grouping the following responses a homemaker, a student, retired or unable to work), age (18-64), education level (based on the level of education completed: did not graduate high school; graduated high school; attended college or technical School; graduated from college or technical school), income level (less than $15,000; $15,000 to less than $25,000; $25,000 to less than $35,000; $35,000 to less than $50,000; $50,000 or more; don't know/not sure/missing) and sex. We also include rurality measured at the individual-level to control for differences in access to care across urban and rural areas. We use the Area Resource File's county Urban Influence Codes (1-2 as urban, 3-12 as rural) to separate rurality.

Analysis

We use Chi-square (for 2-way comparisons among eligibility for parents, low versus high Medicaid Generosity) in bivariate analysis and multivariate logistic regression (weighted for the complex sampling frame of the BRFSS) to measure

variations in our binary outcomes of interest. Our fully-adjusted analysis uses random coefficient logit models with individuals (BRFSS individual-level measures) nested in states (level-2). We tested for a 3-way interaction of Medicaid Generosity by Recession time-period and Race, but found non-significant Wald tests for the interaction term**.** We present results from our fully-adjusted analysis without the 3-way interaction (see Tables 4.2.6 – Table 4.2.7). Our fully-adjusted analysis highlights the interaction of Race by Medicaid Generosity.

Model fit statistics are taken from random coefficient models estimated using Laplace approximation to calculate the Akaike information criterion (AIC) & Bayesian information criterion (BIC). Model coefficients and standard errors are calculated using pseudo maximum likelihood estimation with random intercepts for states (see Table 4.11-Table 4.12).

Results

Differences associated with Medicaid Generosity

Self-reported health status: The proportion of working age adults reporting poor or fair health status across the 2004-2010 period differed across states by levels of Medicaid Generosity (see Table 4.6). Sorting states by MG-Parents, working-age adults living in states with Medicaid eligibility at or above 100% of FPL were less likely to report poor or fair health status than individuals living in less generous states in all years but 2006 and 2009. When states are sorted by MG-Childless Adults, a greater proportion of individuals living in states with no coverage report poor or fair health status. Time-

based differences among those states with coverage for childless adults below 133% of the Federal Poverty Level (FPL) were only present for 2007 (see Table 4.6).

Self-reported forgone medical care in the past 12 months due to cost: Comparing states with different levels of MG-Parents, residents of states with lower eligibility levels reported higher forgone medical care in the past 12 months due to cost, when compared to residents of states with higher levels of Medicaid eligibility across the study period (see Table 4.7).

Comparing states with, different levels of MG-Childless adults (using simple logistic regression for no coverage versus high MG-Childless adults & separately low MG-Childless adults versus high), individuals living in states that have higher levels of MG-Childless adults were less likely to report forgone medical care in the past 12 months due to cost when compared to individuals living in states without coverage for childless adults or with coverage below 133% FPL (see Table 4.2.2). Individuals living in states with some coverage for childless adults but below 133% FPL reported lower levels of forgone medical care related to cost in the past 12 months, when compared to individuals living in states with the highest level of MG-Childless adults (at/above 133% FPL), except in 2009.

One or more poor mental health days in the past 30 days: In comparisons of states with different levels of MG-Parents, differences were consistent for differences in Medicaid Generosity. However, individuals living in states with higher MG-Parents had higher rates of reporting one or more days of poor mental health in the past 30 days.

In comparisons among states with different levels of MG-Childless adults, differences in MG-Childless adults were not consistent across the study period for the rate of reporting one or more poor mental health days (versus no poor mental health days) for all individuals (see Table 4.8).

One or more poor physical health days: In comparisons among states with different levels of MG-Parents, the rate of reporting one of more poor physical health days in the past 30 was consistently lower for resident of states with lower MG-Parents.

Similar to mental health days, in comparisons among states with different levels of MG-Childless adults, we find no consistent differences in reporting one or more poor physical health day in the past 30 days for residents of states with differing levels of MG-Childless adults (see Table 4.9).

Differences in Medicaid Generosity for Adults by Race

Race-based comparisons: Table 5 characterizes study outcomes by Medicaid Generosity within race. In general, White and Asian populations were least likely to report poor outcomes over the period, while Black and AIAN populations were most likely to report them. MG-Parents was not associated with health status in general, however it was linked to other outcomes, overall. MG-childless adults was associated with health status and forgone medical care (see Table 4.10). MG-childless adults was associated with poor physical health days in some comparisons, however MG-childless adults was not associated with poor mental health days for minority populations (see Table 4.10). Furthermore, AIAN, Asian, Black and White individuals had higher rates of reporting forgone medical care in the past 12 months due to cost in areas with low

Medicaid Generosity for parents (<100% FPL) as compared to those AIAN, Asian, Black and White individuals in states with high MG-Parents (at/above 100% FPL) (see Table 4.10). Additionally, the rates of individuals reporting one or more poor mental health days in the past 30 days was lower in states with low MG-Parents.

Adjusted effects of Medicaid Generosity

In our mixed-effect logistic regression analysis we allowed for state cross-level interactions. We report only our fully-adjusted models with unweighted analysis. Figures 4.6-4.13 are predicted probabilities plotted over the interaction of race with Medicaid Generosity.

Self-reported poor or fair health status: Overall, Asian and Black adults were less likely to report fair or poor health status in states with low MG-Parents than states with high MG-Parents, while White adults had the lowest rates of fair or poor health status across the entire period under study (see Table 4.11 and Figure 4.6). When examining changes across MG-Parents and across populations (the interaction of race and Medicaid Generosity), the lower likelihood of reporting poor or fair health status in states with low MG-Parents versus states with high MG-Parents (eligibility at/greater than 100% FPL) among Asian individuals was different than that among White individuals (no difference among White adults), after controlling for all other terms in the model (see Table 4.11 and Figure 4.6).

The lower likelihood of reporting fair or poor health status in states with low MG-Parents of dependent children versus states with high MG-Parents among Black

individuals was different than that among White individuals (no difference among White adults), after controlling for all other terms in the model (see Table 4.11 and Figure 4.6).

Overall, AIAN Individuals in states with no coverage for childless adults were more likely to report fair or poor health status, than AIAN individuals in states with high MG-Childless adults. When examining changes across MG-Childless adults and across populations (the interaction of race and Medicaid Generosity) (see Table 4.12 and Figure 4.8), the higher likelihood of reporting poor or fair health status between states with no coverage for childless adults (as defined in the current study) and high MG-Childless adults (eligibility at/above 133% FPL) among AIAN individuals was different than that among White individuals (no difference among White adults) (see Table 4.12 and Figure 4.7). Here the level of MG-Childless adults was associated with a differential effect on AIAN when compared to White individuals.

Asian individuals in states with low MG-Childless adults were more likely to report fair or poor health status, after controlling for all other terms in the model. The higher likelihood of reporting poor or fair health status in states with low MG-Childless adults (coverage for childless adults < 133% FPL) than high MG-Childless adults (eligibility at/above 133% FPL) among Asian individuals was different than that among White individuals (no difference among White adults). The level of MG-Childless adults was associated with a differential effect for Asian individuals when compared to White individuals. No other race-based difference in changes associated with Medicaid Generosity were found.

Self-reported forgone medical care in the past 12 months due to cost: When examining changes across MG-Parents and across populations (the interaction of race and Medicaid Generosity), AIAN individuals were less likely to report forgone medical care in areas with lower MG-Parents than areas with high MG-Parents (see Table 4.11 and Figure 4.8), after controlling for all other terms in the model. This difference was different than that for White individuals (no difference among White adults).

Overall, AIAN individuals were more likely to report forgone medical care in states with no coverage or low MG-Childless adults than states with high MG-Childless adults after controlling for all other terms in the model. Black individuals in states with no coverage for childless adults were less likely to report forgone medical care than those in states with high MG-Childless adults. Similarly, White individuals in states with low MG-Childless adults were less likely to report forgone medical care than those in states with high MG-Childless adults. When examining changes across MG-Childless adults and across populations (the interaction of race and Medicaid Generosity), the difference in reporting forgone medical care in the past 12 months due to cost between states with no coverage for childless adults and states with high MG-Childless adults (at/above 133% FPL) among AIAN individuals was different than that among White individuals (no difference among White adults), after controlling for all other terms in the model (see Table 4.12 and Figure 4.9). Similarly, AIAN individuals in states with no coverage for childless adults (again, as defined in the current study) were more likely to report forgone medical care in the past 12 months due to cost than their peers in states with high MG-Childless adults. The level of MG-Childless adults was associated with a differential effect for AIAN individuals when compared to White individuals.

The higher likelihood of reporting forgone medical care in states with low MG-Childless adults than states high MG-Childless adults (at/above 133% FPL) among AIAN individuals was different than the lower likelihood among White individuals in states with low MG-Childless adults (versus states with high MG-Childless adults), after controlling for all other terms in the model (see Table 4.12 and Figure 4.9).

The lower likelihood of reporting forgone medical care in states with no coverage for childless adults than states with high MG-Childless adults (at/above 133% FPL) among Black individuals was different than that among White individuals (no difference among White adults), after controlling for all other terms in the model. No other race-based difference in changes associated with MG-Childless adults were found.

One or more poor mental health days in the past 30 days: Overall, Black individuals were more likely to report one or more poor mental health days in states with low MG-Parents than among Black individuals in states with high MG-Parents, after controlling for all other terms in the model (see Table 4.11 and Figure 4.10). When examining changes across MG-Parents and across populations (the interaction of race and Medicaid Generosity), the difference in reporting one or more poor mental health days between states with low MG-Parents and those with high MG-Parents was different than that among White individuals (no difference among White adults) in the same comparison (see Table 4.11 and Figure 4.10).

When examining changes across MG-Childless adults and across populations (the interaction of race and Medicaid Generosity), Black individuals living in states with no coverage were less likely to report one or more poor mental health days, and this

difference was different than that among White individuals (no difference among White adults) (see Table 4.12 and Figure 4.11). When examining changes across MG-Childless adults and across populations, the difference in the likelihood of reporting one or more poor mental health days between states with high and low MG-Childless adults (low versus high) among Black individuals was different than that among White individuals, after controlling for all other terms in the model. The lower likelihood of reporting one or more poor mental health days in states with low MG-Childless adults than states with high MG-Childless adults was greater among Black individuals than that among White individuals (no difference among White adults), after controlling for all other terms in the model. The level of MG-Childless adults was associated with a differential effect for Black individuals compared to White individuals. No other race-based difference in changes associated with Medicaid Generosity were found.

One or more poor physical health days in the past 30 days: Overall, Black adults were more likely to report one or more poor physical health days in states with low MG-Parents, after controlling for all other terms in the model. In contrast, Asian adults were less likely to report one or more poor physical health days in areas with low MG-Parents. When examining changes across MG-Parents and across populations (the interaction of race and Medicaid Generosity), the difference in the likelihood of reporting one or more poor physical health days in the past 30 days between states that have high and low (low versus high) MG-Parents among Black individuals was different than the lack of difference for reporting one or more poor physical health days in the past 30 days between states with high and low MG-Parents among White individuals (see Table 4.11 and Figure 4.12). The higher likelihood of reporting one or more poor physical health

days in states with low MG-Parents as compared to states with high MG-Parents was greater among Black individuals than among White individuals, respectively, after controlling for all other terms in the model. The level of MG-Parents was associated with a differential effect among Black individuals when compared to White individuals.

The difference in the likelihood of reporting one or more poor physical health days in the past 30 days between states that have high and low (low versus high) MG-Parents among Asian individuals was different than the lack of difference for reporting one or more poor physical health days in the past 30 days between states with high and low MG-Parents among White individuals. There is a differential effect among Asian individuals when compared to White individuals, however Asian individuals were more likely to report one or more poor physical health days in the past 30 days in states with high MG-Parents.

Overall, AIAN adults were more likely to report one or more poor physical health days in states with no coverage or low MG-Childless adults (versus high MG-Childless adults), after controlling for all other terms in the model. In contrast, Black adults were less likely to report one or more poor physical health days in states with low MG-Childless adults (versus states with high MG-Childless adults. When examining changes across MG-Childless adults and across populations (the interaction of race and Medicaid Generosity), the difference in the likelihood of reporting one or more poor physical health days in the past 30 days between states with low MG-Childless adults and states with high MG-Childless adults (at/above 133% FPL) among AIAN individuals was different than the lack of difference among White individuals (no difference among White adults), after controlling for all other terms in the model (see Table 4.12 and Figure 4.13).

American Indians or Alaska Natives were more likely to report one or more poor physical health days in states with low MG-Childless adults and this difference is different than the lack difference for White individuals, indicating a differential effect, in fully-adjusted analysis.

The difference in the likelihood of reporting one or more poor physical health days between states with no coverage for childless adults and states with high MG-Childless adults (at/above 133% FPL) among AIAN individuals was different than that among White individuals (no difference among White adults), after controlling for all other terms in the model. Again, the level of MG-Childless adults was associated with a differential effect for AIAN individuals when compared to White individuals.

The difference in the likelihood of reporting one or more poor physical health days between states with low MG-Childless adults and states with high MG-Childless adults (at/above 133% FPL) among Black individuals was different than that among White individuals (no difference among White adults), after controlling for all other terms in the model. The level of MG-Childless adults was associated with a differential effect for Black individuals when compared to White individuals.

Discussion

Differences across states in Medicaid eligibility for working age adults were associated with differences in self-reported health, reporting forgone medical care in the past 12 months due to cost, reporting one or more poor mental health days in the past 30 days and reporting one or more poor physical health days in the past 30 days.

Individuals in states with high MG-Childless adults (at or above 133% of the FPL), were less likely to report fair or poor health status than individuals in states with no coverage for childless adults. Overall, individuals in states with higher MG-Parents (>100% FPL) report fair or poor health status at lower rates than those in states with lower MG-Parents (<100%). This suggests an association of better health status where Medicaid eligibility is more generous. However, after considering several social determinants of health and differences in state characteristics, Asian and Black individuals experienced the opposite, where the likelihood of poor or fair health was higher in areas with high MG-Parents. This may suggest states with higher rates of fair or poor health among minority populations are more generous in their eligibility due to this already present vulnerability, however determining this phenomena is outside the scope of this study.

Individuals in states with higher levels of MG-Parents (at/above 100% FPL) reported lower rates of individuals reporting forgone medical care due to cost in the past 12 months across the entire study period. The same was true for MG-Childless adults when comparing states with no coverage to states with high MG-Childless adults. This suggests that differences in state Medicaid policies are associated with differences in forgoing health care services in the past 12 months due to cost throughout the entire study period, where the highest rates of forgone care were experienced during and after the Great Recession. Furthermore, having more generous eligibility criteria may have served to lessen the effects of the Recession on forgone medical care (i.e. it could have been worse without Medicaid Generosity). This would seem reasonable, as minority and White adults experienced lower utilization of medical care (physician office visits, prescription

drug fills and inpatient visits) during the Recession than before (Mortensen and Chen, 2013)[251]. When controlling for several social determinants of health and state socioeconomic factors, these overall differences were not consistent for all race groups. This suggests the importance of these individual and contextual factors on forgone medical care.

The link between the Recession and loss of employer-sponsored health insurance for working age individuals makes the measure of forgone medical care both timely and time sensitive. Changes in health outcomes may lag, while changes in whether or not one decides to utilize needed medical care may be more sensitive to the Recession timeline measured in the current study. For example, the need for safety net providers increased during the Recession, as more adults lost employer-sponsored health insurance (Felland et al., 2011)[252]. These safety nets providers benefited from resources generated through federal stimulus funding preventing large cuts to Medicaid eligibility across states (Felland et al., 2010)[253]; (Felland et al., 2011). Even so, worry over organizational survival by managerial staff among community-based mental health organizations was related to the Recession in Ohio (Sweeney and Knudsen, 2013)[254]. What's more, over half of uninsured individuals are unaware of safety net providers or do not use them (May et al., 2004)[255]. This, coupled with an economically troubling time, where many individuals are already losing health insurance through their employer puts many without access to medical care. This is reason to suggest the importance of Medicaid accessibility (i.e. eligibility) for vulnerable populations.

Raw numbers indicate individuals in states with some coverage for childless adults as compared to states with high MG-Childless adults or states with no coverage for

childless adults were less likely to report forgone medical care in the past 12 months due to cost. The level of Medicaid Generosity for childless adults in these states may play an important role in whether individuals get access to perceived needed health care. Black, Asian and White individuals reported the lowest rates of forgone medical care in the past 12 months due to cost in states with coverage for childless adults below 133% of the FPL. The level of Medicaid Generosity for childless adults is associated with differences in accessing care.

Differences between states with different levels of Medicaid Generosity within race groups is not the same for all race groups. Black individuals and AIAN individuals may be more sensitive to changes in Medicaid eligibility levels than White individuals, after controlling for many social determinants of health. For example, Black individuals were less likely to report one or more poor physical health days in states with high MG-Parents and this difference was greater than that of White individuals. Similarly, AIAN adults were more likely to experience forgone medical care in states with low or no MG-Childless adults and this association was different than that among White adults, after controlling for several factors. Furthermore, White adults experienced little differences in our outcomes in fully-adjusted analysis, in contrast to minority adults.

Variations in state policies regarding Medicaid are particularly important for minority individuals. American Indian or Alaska Native individuals and Black individuals and in some cases Asian individuals may benefit from state Medicaid policies that are more consistent with coverage under the Affordable Care Act versus no coverage.

State policy makers' and state legislators' decisions on coverage guidelines for adults in their states may be associated with individuals reporting less forgone medical care moving forward. Key social determinants of health were included into this analysis that fit with our theoretical framework. These included individual and state variables. Identifying possible cross-level interactions allows researchers to identify what higher-level variables may influence variables at the individual level [256](Raudenbush, 2002). Simply put, failure to realize a major moderator at the higher level (i.e. state-level or county-level), may lead to decisions based on less than a complete picture.

State policy makers must have the best available information if they are to make the best decisions for members of their constituencies and local communities they serve. In times of increasing economic fluctuation and income inequality, researchers should identify possible buffers to socio-demographic inequities, particularly for working age adults. Further research into the higher end of the working age spectrum may also provide useful information for those nearing retirement (Gustman et al., 2012)[257]. Overall, we find that state Medicaid Generosity may serve to buffer some of the effects of the Great Recession for vulnerable individuals. Further research that investigates other possible influences on individuals' health status and ability to access care should be explored with contextual factors in mind. One's location of residence plays into their health experiences over time, but policy makers have the power to make adjustments to policies affecting vulnerable individuals.

Conclusion

This research serves two purposes. We have a further understanding of a historical phenomenon (i.e. outcomes measured before, during and after the Recession) which is still affecting millions around the globe and in the United States. This study sheds light on policies that may have helped millions of individuals throughout the Great Recession. In addition, we now have the opportunity to put this research into practice. Through this and similar knowledge dissemination activities we can close the gap in some of the uncertainty surrounding the debate over the utility of Medicaid.

While we cannot say with certainty that any causal effect is present for Medicaid eligibility and the population of interest, as this is a series of observational analysis. We can show that a relationship exists between Medicaid Generosity and our outcomes of interest for our population of interest. Further research should be conducted that looks at the same individuals over time to identify whether individuals who will qualify for Medicaid eligibility under the Affordable Care Act have better outcomes with regard to health and health care utilization with new eligibility standards. Analysis that further specifies individuals into income categories likely to qualify for Medicaid may shed greater light on our questions; however, doing so with smaller racial groups may be hindered due to limited sample sizes.

Table 4.6. Proportion of working age adults reporting fair or poor health status, 2004 – 2010 BRFSS, by Medicaid Generosity in the State.

Percent of respondents reporting fair or poor health:	2004 % (SE)	2005 % (SE)	2006 % (SE)	2007 % (SE)	2008 % (SE)	2009 % (SE)	2010 % (SE)	Total % (SE)
Adults with children								
Below 100% FPL for eligibility	13.7% * (0.002)	14.1% * (0.002)	13.6% (0.002)	Not Available	14.0% * (0.002)	13.8% (0.002)	14.1% * (0.002)	13.9% * (0.001)
At/above 100% FPL (ref)	13.5% (0.003)	13.8% (0.003)	13.9% (0.003)	Not Available	13.6% (0.002)	13.8% (0.002)	13.6% (0.002)	13.7% (0.001)
Childless Adults								
No coverage	13.7% (0.002)	14.2% * (0.002)	13.8% (0.002)	14.3%* (0.002)	14.1% * (0.002)	14.2% * (0.002)	14.2% * (0.001)	14.1% * (0.001)
Coverage below 133% FPL	13.3% (0.004)	13.4% (0.004)	13.2% (0.004)	13.8%* (0.004)	12.5% (0.004)	12.2% (0.004)	12.6% (0.003)	13.0% (0.002)
Coverage at/above 133% FPL (ref)	12.8% (0.005)	12.7% (0.003)	13.2% (0.003)	12.5% (0.003)	13.1% (0.004)	12.2% (0.003)	13.0% (0.003)	12.8% (0.001)

*indicates p-value ≤.05

Note: Analysis is weighted for the complex sampling frame of the BRFSS

Table 4.7. Proportion of working age adults reporting Forgone Medical Care, 2004 – 2010 BRFSS, by Medicaid Generosity in the State.

Percent of respondents reporting forgone medical care:	2004 % (SE)	2005 % (SE)	2006 % (SE)	2007 % (SE)	2008 % (SE)	2009 % (SE)	2010 % (SE)	Total % (SE)
Adults with children								
Below 100% FPL for eligibility	16.6% * (0.002)	16.3% * (0.002)	16.2% * (0.002)	Not Available	17.0% * (0.002)	18.1% * (0.002)	17.9% * (0.002)	17.0% * (0.001)
At/above 100% FPL (ref)	13.2% (0.003)	14.0% (0.003)	13.4% (0.003)	Not Available	14.6% (0.003)	15.7% (0.002)	15.7% (0.002)	14.5% (0.001)
Childless Adults								
No coverage	15.3% (0.002)	15.6% (0.002)	15.6% * (0.002)	15.7%* (0.002)	16.4% (0.002)	17.6% * (0.002)	17.4% * (0.002)	16.2% * (0.001)
Coverage below 133% FPL	14.4% (0.004)	13.9% * (0.004)	12.4% * (0.005)	13.6%* (0.005)	13.5% * (0.004)	15.1% (0.005)	13.9% * (0.004)	13.8% * (0.002)
Coverage at/above 133% FPL (ref)	15.5% (0.005)	15.7% (0.004)	14.8% (0.003)	15.0% (0.003)	16.3% (0.004)	15.6% (0.003)	15.4% (0.004)	15.5% (0.002)

*indicates p-value ≤.05

Note: Analysis is weighted for the complex sampling frame of the BRFSS

Table 4.8. Proportion of working age adults reporting one or more poor mental health days, 2004 – 2010 BRFSS, by Medicaid Generosity in the State.

Percent of respondents reporting one or more poor mental health days:	2004 % (SE)	2005 % (SE)	2006 % (SE)	2007 % (SE)	2008 % (SE)	2009 % (SE)	2010 % (SE)	Total % (SE)
Adults with children								
Below 100% FPL for eligibility	36.9% * (0.002)	35.7% * (0.002)	36.2% * (0.003)	Not Available	36.1% * (0.002)	36.5% * (0.002)	36.6% * (0.003)	36.3% * (0.001)
At/above 100% FPL (ref)	38.8% (0.004)	38.7% (0.004)	39.5% (0.004)	Not Available	38.9% (0.003)	38.0% (0.003)	37.6% (0.003)	38.5% (0.001)
Childless Adults								
No coverage	37.3% * (0.002)	36.6% (0.002)	37.5% (0.003)	36.9%* (0.002)	37.0% (0.002)	37.0% (0.002)	36.9% (0.002)	37.0% * (0.001)
Coverage below 133% FPL	39.7% * (0.006)	38.5% (0.005)	36.8% (0.006)	37.0% (0.006)	37.9% (0.006)	37.5% (0.006)	37.6% (0.005)	37.8% (0.002)
Coverage at/above 133% FPL (ref)	42.5% (0.007)	37.6% (0.005)	37.7% (0.005)	36.1% (0.005)	37.7% (0.005)	37.8% (0.005)	37.7% (0.005)	37.7% (0.002)

*indicates p-value ≤.05
Note: Analysis is weighted for the complex sampling frame of the BRFSS

Table 4.9. Proportion of working age adults reporting one or more poor physical health days, 2004 – 2010 BRFSS, by Medicaid Generosity in the State.

Percent of respondents reporting one or more poor physical health days:	2004 % (SE)	2005 % (SE)	2006 % (SE)	2007 % (SE)	2008 % (SE)	2009 % (SE)	2010 % (SE)	Total % (SE)
Adults with children								
Below 100% FPL for eligibility	34.4% * (0.002)	34.8% * (0.002)	34.1% * (0.002)	Not Available	35.4% * (0.002)	35.2% * (0.002)	34.9% (0.003)	34.8% * (0.001)
At/above 100% FPL (ref)	35.4% (0.004)	36.5% (0.004)	36.2% (0.004)	Not Available	36.6% (0.003)	36.4% (0.003)	34.8% (0.003)	35.9% (0.001)
Childless Adults								
No coverage	34.5% * (0.002)	35.1% * (0.002)	34.9% (0.002)	34.7% (0.002)	35.9% (0.002)	35.5% (0.002)	34.9% (0.002)	35.1% 0.001)
Coverage below 133% FPL	36.4% (0.006)	37.0% (0.005)	35.1% (0.006)	35.7% (0.006)	35.5% (0.006)	37.1% (0.006)	34.9% (0.005)	36.0% (0.002)
Coverage at/above 133% FPL (ref)	37.4% (0.007)	37.1% (0.005)	35.1% (0.005)	34.7% (0.005)	36.7% (0.005)	35.6% (0.005)	34.3% (0.005)	35.6% (0.002)

*indicates p-value ≤.05

Note: Analysis is weighted for the complex sampling frame of the BRFSS

Table 4.10. Health care utilization and health outcomes among working age adults, by different levels of Medicaid Generosity and race, in percent, 2004 – 2010 BRFSS

Medicaid Generosity for Parents of dependent children												
	Fair/Poor Health Status, %			Forgone Medical Care, %			≥ 1 Poor Physical Health Days, %			≥ 1 Poor Mental Health Days, %		
	Low	High		Low	High		Low	High		Low	High	
Race												
AIAN	24.30	26.14		26.29*	23.05		43.55	42.42		43.24*	46.27	
Asian	6.13*	8.90		13.85*	11.17		25.83*	29.25		27.11*	30.73	
Black	18.40	18.65		23.02*	19.07		35.07*	37.95		36.04*	39.43	
White	12.39	12.53		14.97*	13.26		35.08*	36.13		36.84*	38.88	
Medicaid Generosity for Childless Adults												
	Fair/Poor Health Status, %			Forgone Medical Care, %			≥ 1 Poor Physical Health Days, %			≥ 1 Poor Mental Health Days, %		
	No Coverage	Low	High (ref)	No Coverage	Low	High (ref)	No Coverage	Low	High (ref)	No Coverage	Low	High (ref)
Race												
AIAN	25.70*	22.05	21.63	25.65*	21.59	20.59	43.62*	41.73	39.40	44.80	43.14	43.08
Asian	7.76	9.25	8.07	12.29	10.03*	13.64	27.68	29.00	29.44	29.51	28.31	28.20
Black	18.98*	16.11*	20.86	22.49*	16.53*	25.91	36.02*	35.94*	38.63	37.20	38.26	39.06
White	12.70*	11.23	11.48	14.43	12.14*	14.15	35.32	36.60*	35.51	37.48	38.58*	37.75

*indicates other values differ from the high generosity condition, p-value ≤.05
Note: Analysis is weighted for the complex sampling frame of the BRFSS

Table 4.11. Change in health services use and health outcomes among working age adults, 2004 – 2010 BRFSS, across Medicaid Generosity for Parents of Dependent Children

	Fair, Poor Health Status		Forgone Care		≥1 Poor Mental Health Days		≥1 Poor Physical Health Days	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Intercept	**-4.436**	0.104	**-3.487**	0.126	**-0.648**	0.101	**-0.970**	0.066
Fixed Effects								
Race								
AIAN	**0.403**	0.039	**0.076**	0.038	0.045	0.030	0.054	0.031
Asian	**0.415**	0.041	-0.031	0.041	**-0.341**	0.025	**-0.153**	0.025
Black	**0.334**	0.020	**0.038**	0.019	**-0.257**	0.014	**-0.133**	0.014
White (ref.)	---	.	---	.	---	.	---	.
Random Effects:								
State (Intercept)	0.013	0.003	0.023	0.005	0.015	0.003	0.006	0.001
Medicaid Generosity for Parents								
Medicaid Generosity <100% FPL	0.020	0.017	0.027	0.017	0.019	0.011	-0.012	0.011
Medicaid Generosity ≥100% FPL	---	.	---	.	---	.	---	.
Race*Medicaid Generosity								
AIAN * Eligibility <100% FPL	-0.071	0.038	**-0.076**	0.037	-0.039	0.029	-0.002	0.031
AIAN* Eligibility ≥100% FPL	---	.	---	.	---	.	---	.
Asian * Eligibility <100% FPL	**-0.252**	0.050	0.076	0.045	-0.041	0.029	**-0.097**	0.029
Asian*	---	.	---	.	---	.	---	.

Eligibility ≥100% FPL								
Black * Eligibility <100% FPL	**-0.094**	0.020	-0.012	0.019	**0.038**	0.014	**0.061**	0.014
Black* Eligibility ≥100% FPL	---	.	---	.	---	.	---	.
White * Eligibility <100% FPL	---	.	---	.	---	.	---	.
White* Eligibility ≥100% FPL	---	.	---	.	---	.	---	.

Model Fit Statistics for Self-reported Health Status for Parents of dependent children

Fit Indices	Model 4	Model 5	Model 6
-2 Log Likelihood	921617.9	921554.9	921548.5
AIC (smaller is better)	921689.9	921638.9	921648.5
AICC (smaller is better)	921689.9	921638.9	921648.5
BIC (smaller is better)	921759.4	921720	921745.1
CAIC (smaller is better)	921795.4	921762	921795.1
HQIC (smaller is better)	921716.5	921669.9	921685.4

Model Fit Statistics for Self-reported Forgone Medical Care for Parents of dependent children

Fit Indices	Model 4	Model 5	Model 6
-2 Log Likelihood	1025412	1025358	1025347
AIC (smaller is better)	1025484	1025442	1025447
AICC (smaller is better)	1025484	1025442	1025447
BIC (smaller is better)	1025553	1025523	1025543
CAIC (smaller is better)	1025589	1025565	1025593
HQIC (smaller is better)	1025510	1025473	1025484

Model Fit Statistics for reporting One or More Poor Mental Health Days for Parents of dependent children

Fit Indices	Model 4	Model 5	Model 6
-2 Log Likelihood	1884898	1884868	1884859
AIC (smaller is better)	1884970	1884952	1884959
AICC (smaller is better)	1884970	1884952	1884959
BIC (smaller is better)	1885040	1885033	1885056
CAIC (smaller is better)	1885076	1885075	1885106
HQIC (smaller is better)	1884997	1884983	1884996
Model Fit Statistics for reporting One or More Poor Physical Health Days for Parents of dependent children			
Fit Indices	Model 4	Model 5	Model 6
-2 Log Likelihood	1803092	1803022	1803008
AIC (smaller is better)	1803164	1803106	1803108
AICC (smaller is better)	1803164	1803106	1803108
BIC (smaller is better)	1803234	1803187	1803205
CAIC (smaller is better)	1803270	1803229	1803255
HQIC (smaller is better)	1803191	1803137	1803145

Note: Bolded type face indicates significant ≤ .05 (p-value)
Self-reported health status: Intra-class correlation coefficient (ICC) = 0.03.
Forgone medical care: Intra-class correlation coefficient (ICC) = 0.02.
One or more poor mental health days: Intra-class correlation coefficient (ICC) = 0.01.
One or more poor physical health days: Intra-class correlation coefficient (ICC) = 0.003.
Fully-adjusted analysis controls for sex, age, income, education, insurance status, employment, rurality, disability, diabetes status, random state intercept, state poverty rate and state unemployment rate, the interaction of race by recession time-period, Medicaid Generosity, the interaction of Medicaid Generosity and time and the interaction between Medicaid Generosity and Race.

Table 4.12. Change in health services use and health outcomes among working age adults, 2004 – 2010 BRFSS across Medicaid Generosity for Childless adults

	Fair, Poor Health Status		Forgone Care		≥1 Poor Mental Health Days		≥1 Poor Physical Health Days	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Intercept	**-4.391**	0.100	**-3.449**	0.121	**-0.639**	0.099	**-0.955**	0.063
Fixed Effects								
Race								
AIAN	**0.235**	0.038	**-0.236**	0.036	0.008	0.028	-0.026	0.029
Asian	0.096	0.110	-0.116	0.093	**-0.415**	0.062	**-0.187**	0.063
Black	**0.329**	0.040	**0.106**	0.037	**-0.135**	0.030	-0.018	0.031
White (ref.)	---	.	---	.	---	.	---	.
Random Effects:								
State (Intercept)	0.012	0.002	0.022	0.004	0.013	0.003	0.005	0.001
Medicaid Generosity for Parents								
No Coverage for Childless Adults	0.029	0.025	0.004	0.023	0.026	0.016	-0.022	0.016
Medicaid Generosity of Childless Adults Eligibility <133%FPL	-0.041	0.050	**-0.132**	0.058	0.081	0.046	0.032	0.031
Medicaid Generosity of Childless Adults Eligibility ≥133%FPL	---	.	---	.	---	.	---	.
Race*Medicaid Generosity								
AIAN * No Coverage	**0.142**	0.039	**0.324**	0.037	0.0004	0.029	**0.099**	0.030
AIAN*	0.120	0.062	**0.272**	0.060	0.029	0.047	**0.097**	0.049

Eligibility <133%FPL								
AIAN*Eligibility ≥133% FPL	---	.	---	.	---	.	---	.
Asian * No Coverage	0.101	0.111	0.178	0.093	0.045	0.063	-0.052	0.063
Asian* Eligibility <133% FPL	**0.437**	0.114	-0.105	0.100	0.101	0.066	0.047	0.066
Asian*Eligibility ≥133% FPL	---	.	---	.	---	.	---	.
Black * No Coverage	-0.076	0.040	**-0.082**	0.036	**-0.075**	0.030	-0.060	0.031
Black* Eligibility <133% FPL	-0.073	0.048	-0.072	0.045	**-0.166**	0.035	**-0.124**	0.036
Black*Eligibility ≥133% FPL	---	.	---	.	---	.	---	.
White * No Coverage	---	.	---	.	---	.	---	.
White* Eligibility <133% FPL	---	.	---	.	---	.	---	.
White*Eligibility ≥133% FPL	---	.	---	.	---	.	---	.

Model Fit Statistics for Self-reported Health Status for Childless Adults			
Fit Indices	Model 4	Model 5	Model 6
-2 Log Likelihood	1095841	1095757	1095735
AIC (smaller is better)	1095915	1095855	1095865
AICC (smaller is better)	1095915	1095855	1095865
BIC (smaller is better)	1095986	1095949	1095991
CAIC (smaller is better)	1096023	1095998	1096056
HQIC (smaller is better)	1095942	1095891	1095913

Model Fit Statistics for Self-reported Forgone Medical Care for Childless Adults			
Fit Indices	Model 4	Model 5	Model 6
-2 Log Likelihood	1214500	1214364	1214358
AIC (smaller is better)	1214574	1214462	1214488
AICC (smaller is better)	1214574	1214462	1214488

BIC (smaller is better)	1214645	1214557	1214613
CAIC (smaller is better)	1214682	1214606	1214678
HQIC (smaller is better)	1214601	1214498	1214536
Model Fit Statistics for reporting One or More Poor Mental Health Days for Childless Adults			
Fit Indices	Model 4	Model 5	Model 6
-2 Log Likelihood	2234379	2234329	2234312
AIC (smaller is better)	2234453	2234427	2234442
AICC (smaller is better)	2234453	2234427	2234442
BIC (smaller is better)	2234524	2234522	2234568
CAIC (smaller is better)	2234561	2234571	2234633
HQIC (smaller is better)	2234480	2234463	2234490
Model Fit Statistics for reporting One or More Poor Physical Health Days for Childless Adults			
Fit Indices	Model 4	Model 5	Model 6
-2 Log Likelihood	2136980	2136920	2136906
AIC (smaller is better)	2137054	2137018	2137036
AICC (smaller is better)	2137054	2137018	2137036
BIC (smaller is better)	2137126	2137112	2137162
CAIC (smaller is better)	2137163	2137161	2137227
HQIC (smaller is better)	2137081	2137054	2137084

Note: Bolded type face indicates significant ≤ .05 (p-value)
Fully-adjusted analysis controls for sex, age, income, education, insurance status, employment, rurality, disability, diabetes status, random state intercept, state poverty rate and state unemployment rate, the interaction of race by recession time-period, Medicaid Generosity, the interaction of Medicaid Generosity and time and the interaction between Medicaid Generosity and Race.

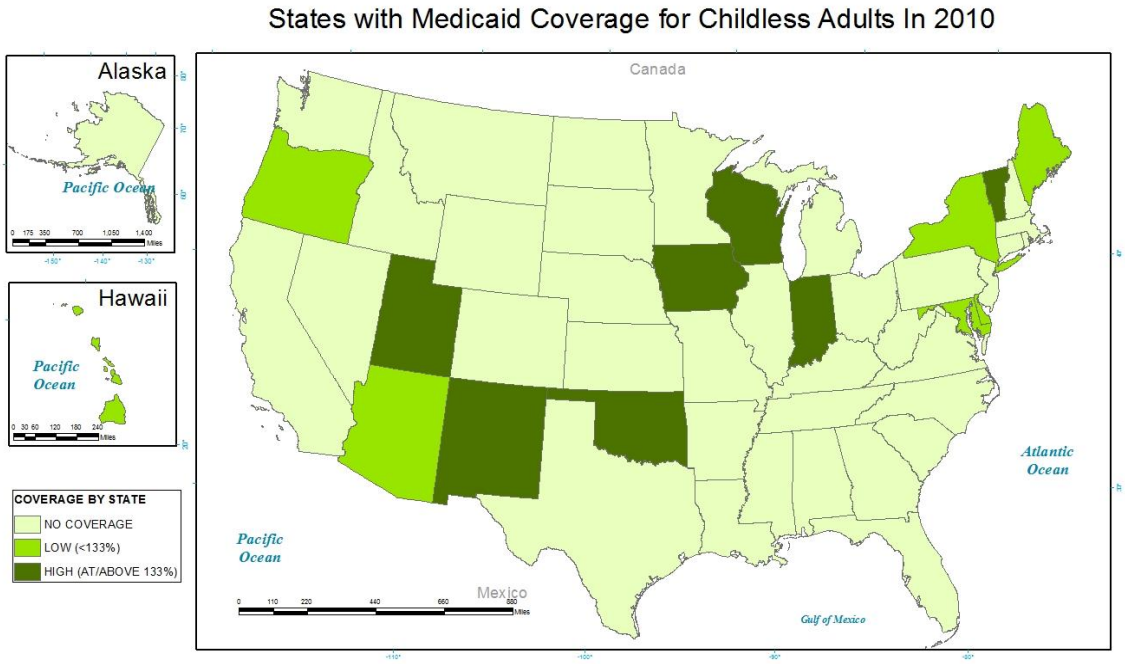

Figure 4.5a. States with Medicaid Coverage for Childless Adults as of 2010.

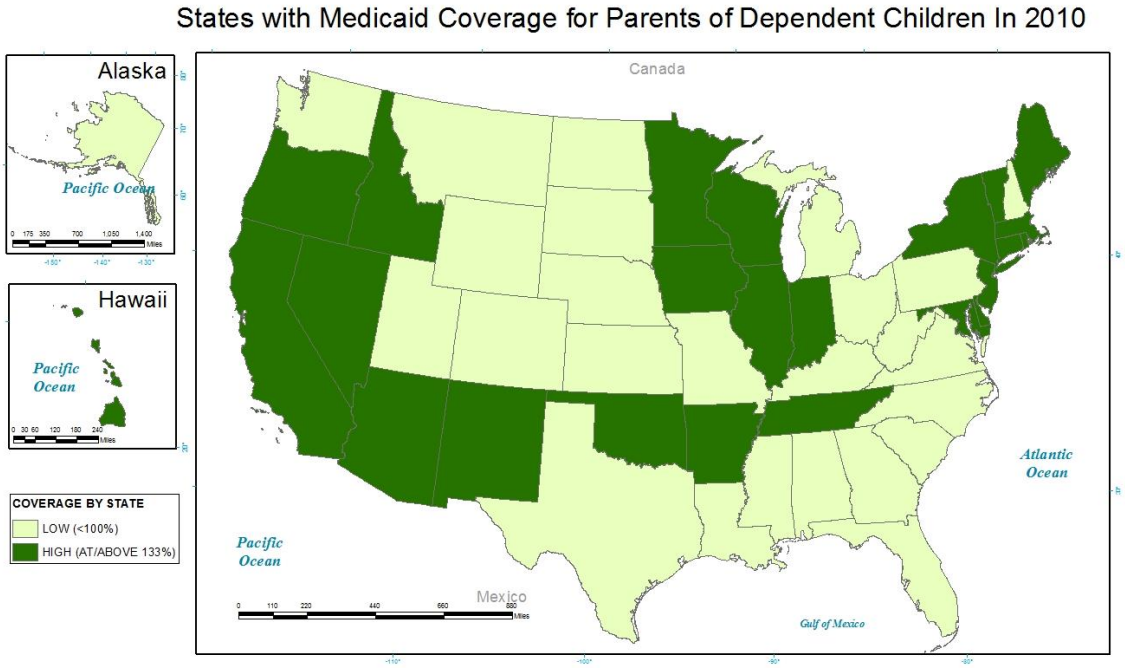

Figure 4.5b. States with Medicaid Coverage for Parents of Dependent Children as of 2010 (as defined by the current study)

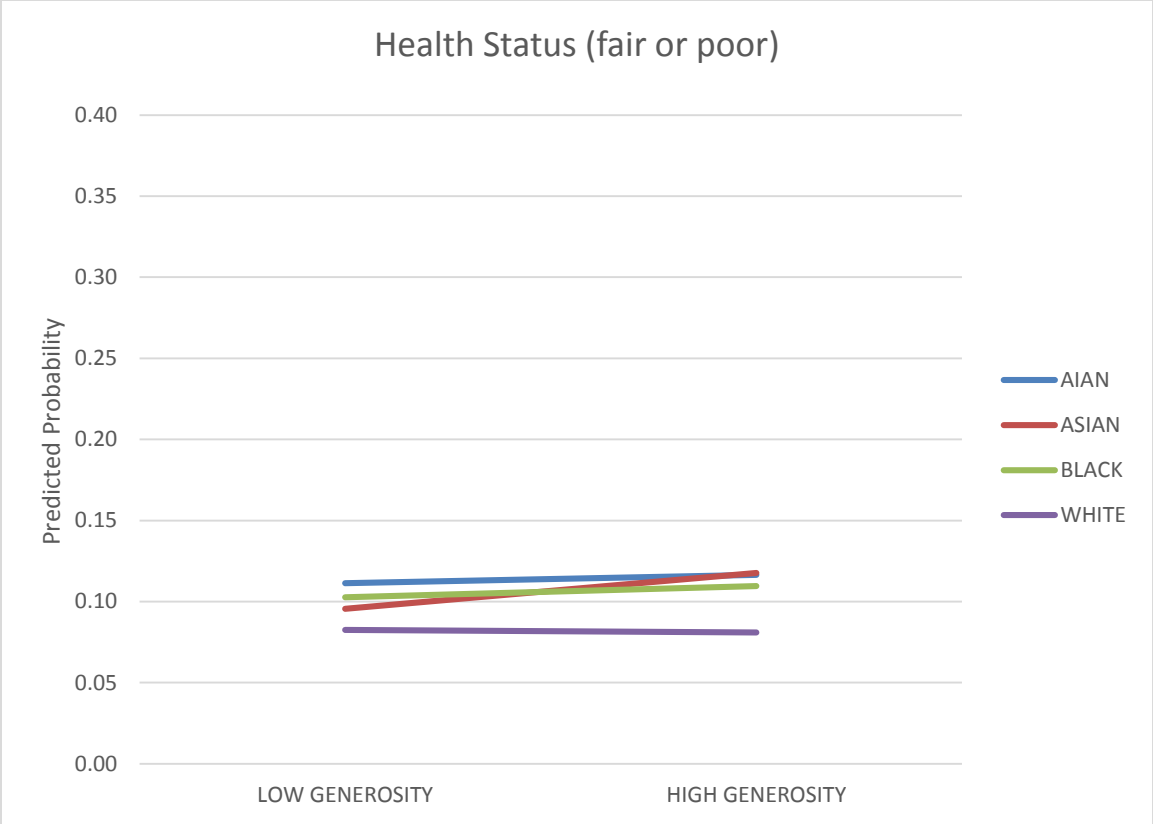

Figure 4.6. Predicted Probabilities for the interaction of race by Medicaid Generosity for parents of dependent children for Self-reported Health Status from the Fully-Adjusted analysis.

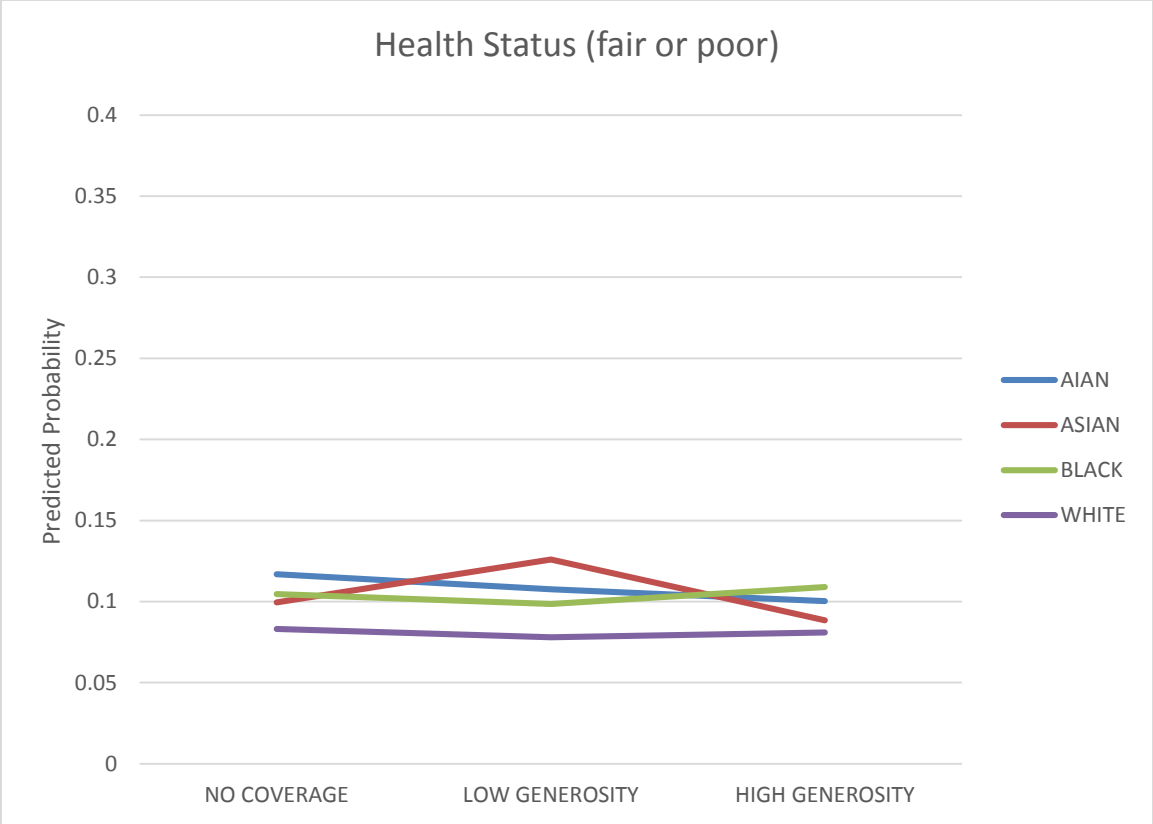

Figure 4.7. Predicted Probabilities for the interaction of race by Medicaid Generosity for childless adults for Self-reported Health Status from the Fully-Adjusted analysis.

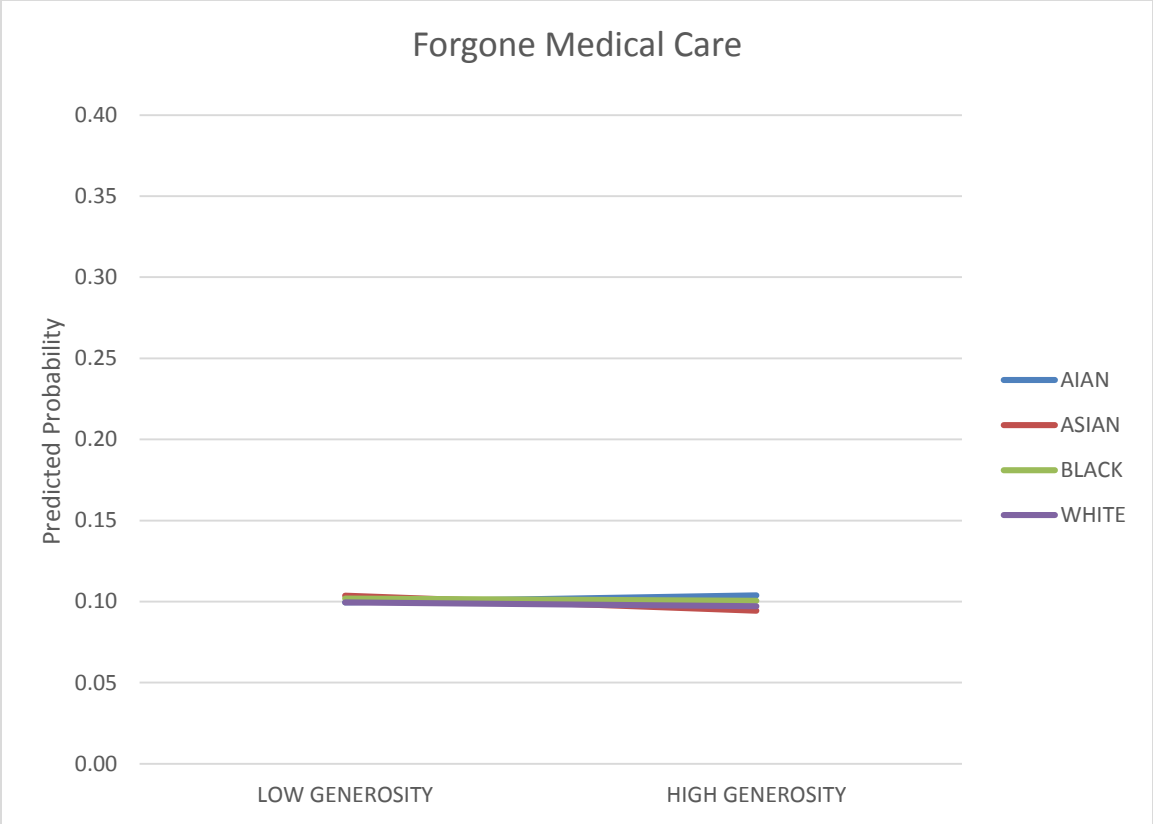

Figure 4.8. Predicted Probabilities for the interaction of race by Medicaid Generosity for parents of dependent children for Self-reported Forgone Medical Care from the Fully-Adjusted analysis.

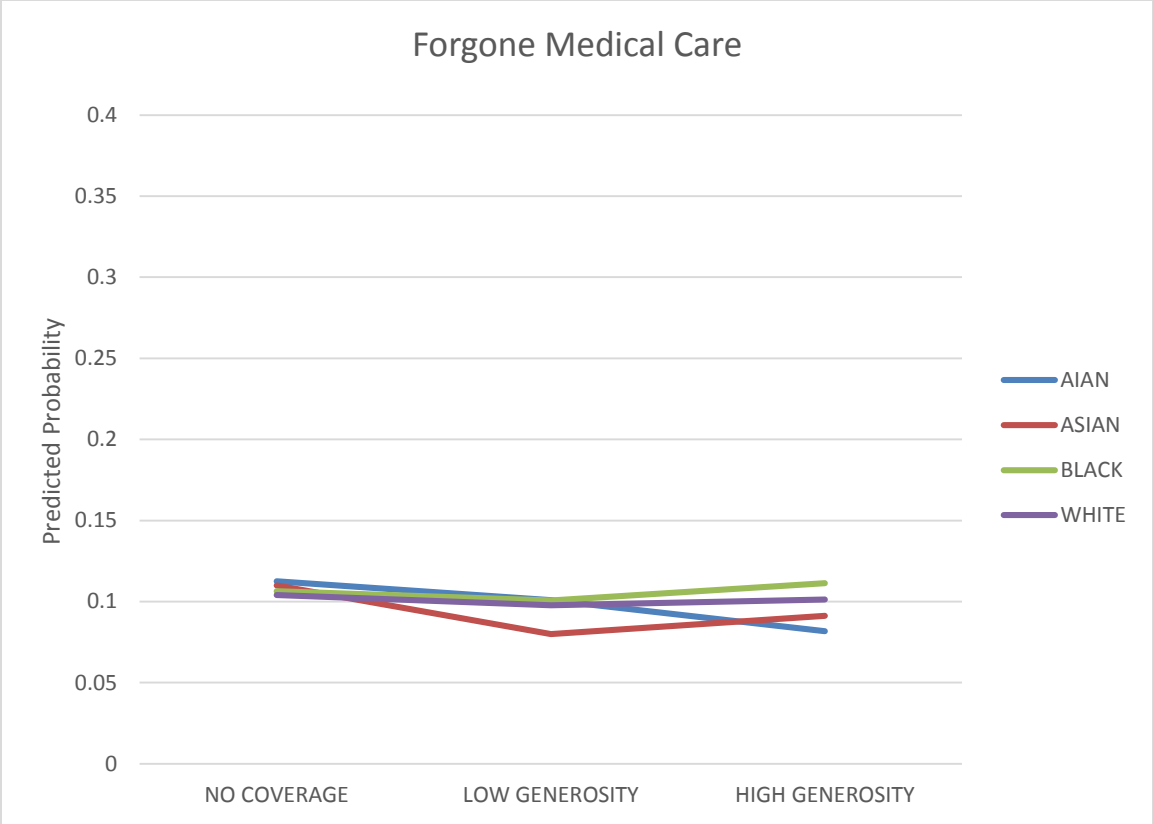

Figure 4.9. Predicted Probabilities for the interaction of race by Medicaid Generosity for childless adults for Self-reported Forgone Medical Care from the Fully-Adjusted analysis.

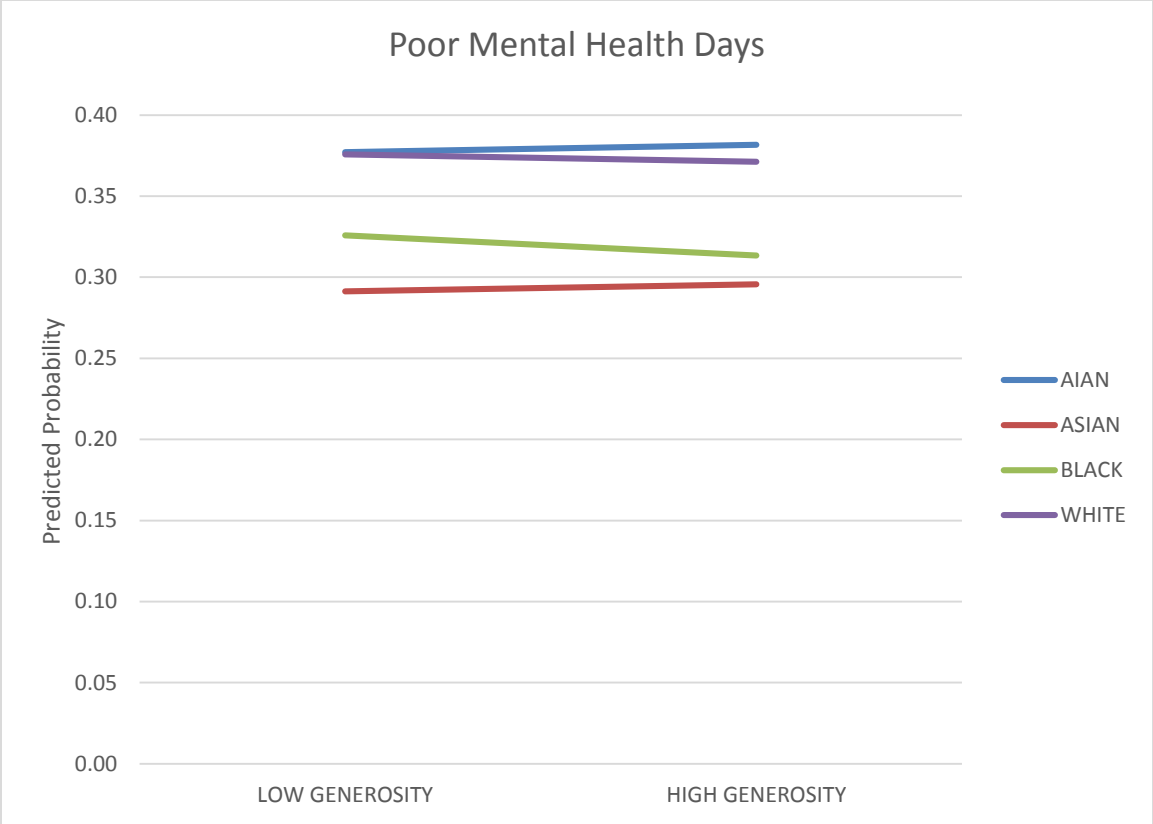

Figure 4.10. Predicted Probabilities for the interaction of race by Medicaid Generosity for parents of dependent children for one or more poor Mental Health Days from the Fully-Adjusted analysis.

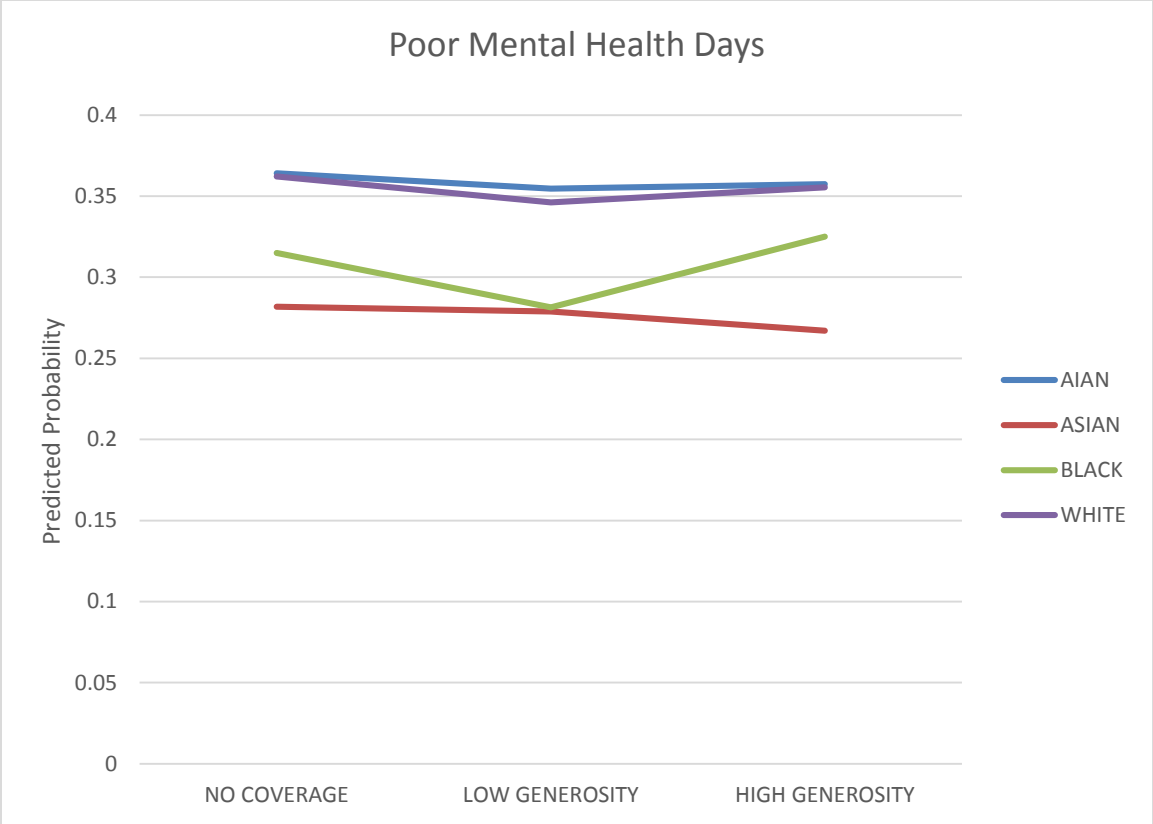

Figure 4.11. Predicted Probabilities for the interaction of race by Medicaid Generosity for childless adults for one or more poor Mental Health Days from the Fully-Adjusted analysis.

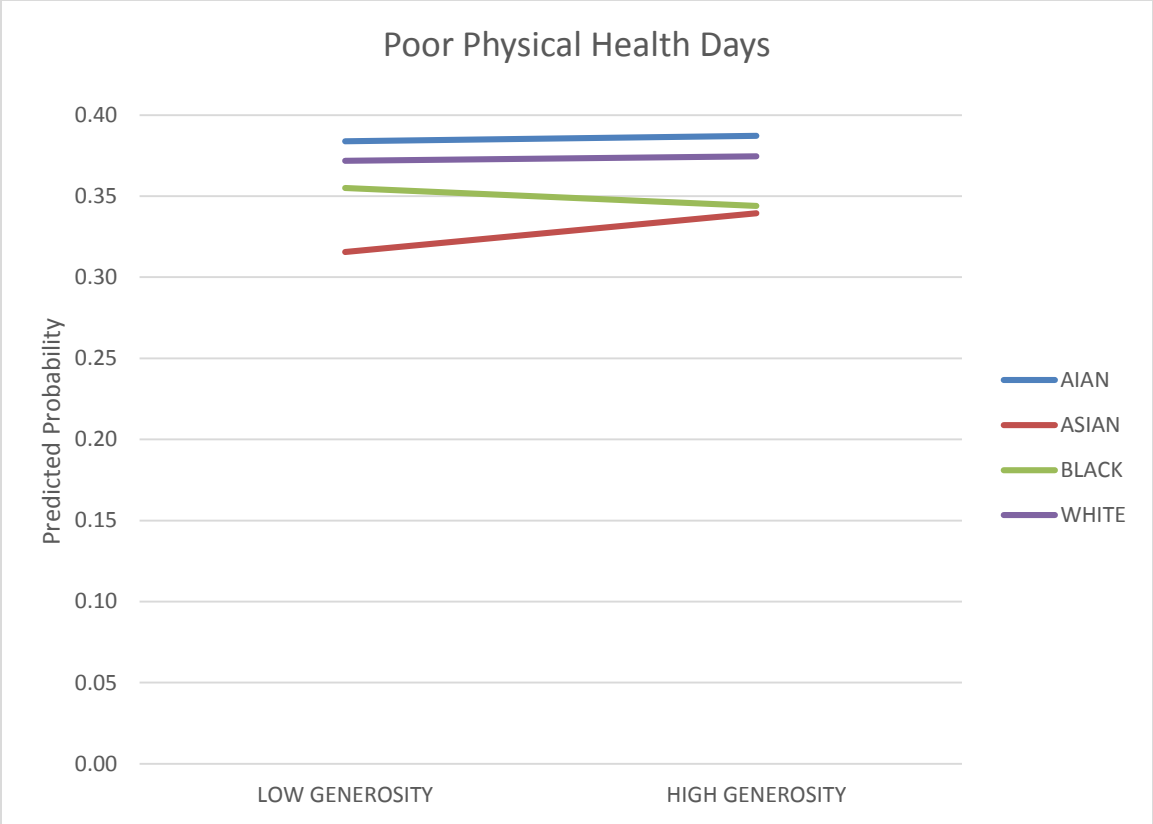

Figure 4.12. Predicted Probabilities for the interaction of race by Medicaid Generosity for parents of dependent children for one or more poor Physical Health Days from the Fully-Adjusted analysis.

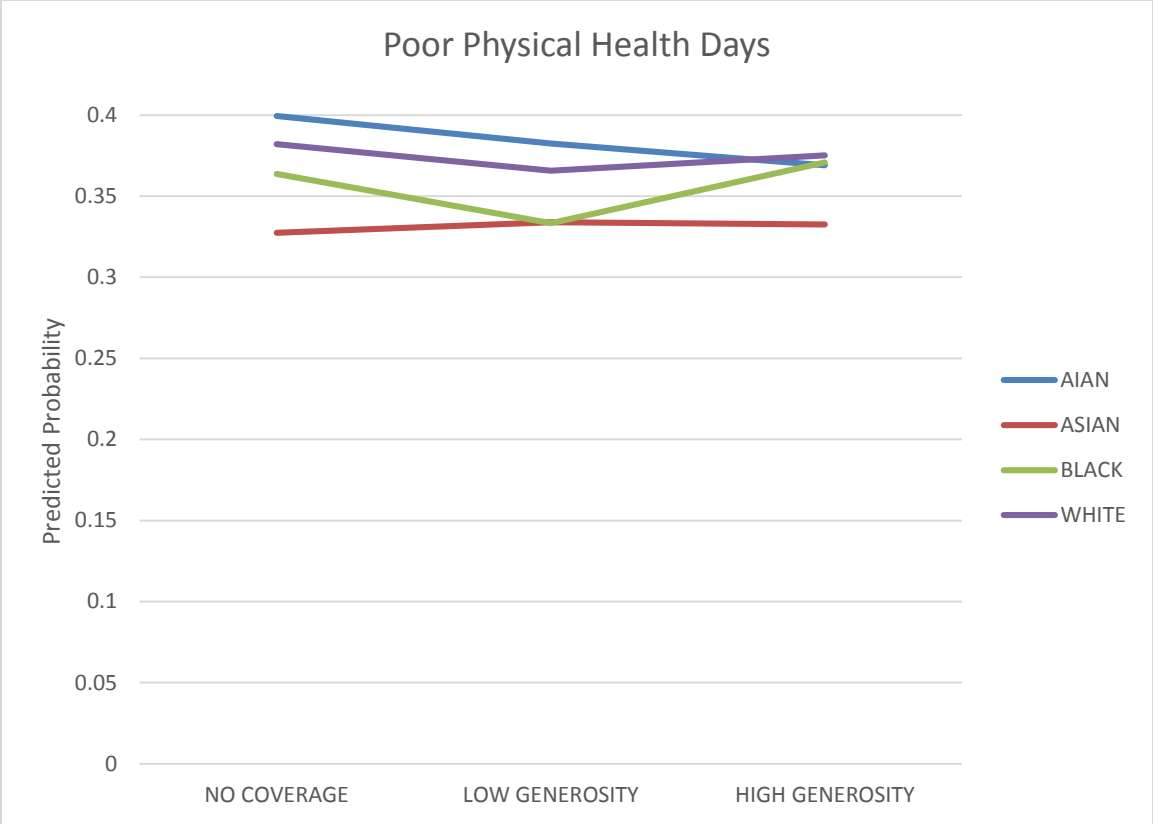

Figure 4.13. Predicted Probabilities for the interaction of race by Medicaid Generosity for childless adults for one or more poor Physical Health Days from the Fully-Adjusted analysis.

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APPENDIX A. Total Medicaid Enrollment in 50 States and the District of Columbia, June 2000 to June 2011, Percent Change

Table A.1. Total Medicaid Enrollment in 50 States and the District of Columbia, June 2000 to June 2011, Percent Change [(1)]

State	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
Alabama	5.40%	4.10%	1.30%	0.50%	-3.70%
Alaska	6.40%	2.70%	1.90%	1.60%	-2.90%
Arizona	20.30%	2.80%	10.90%	-1.80%	0.70%
Arkansas	-1.50%	6.70%	4.70%	4.90%	2.50%
California	5.10%	0.30%	1.20%	-0.70%	-0.20%
Colorado	10.00%	12.60%	7.30%	-2.20%	-5.10%
Connecticut	-1.40%	8.70%	-0.40%	-3.20%	2.40%
Delaware	7.80%	7.90%	4.20%	5.70%	-0.10%
DC	4.10%	5.10%	2.20%	-0.70%	0.60%
Florida	4.30%	5.50%	5.20%	-0.70%	-5.90%
Georgia	11.50%	5.70%	4.10%	-3.90%	-7.60%
Hawaii	3.50%	5.60%	4.60%	0.70%	-1.40%
Idaho	8.80%	5.90%	8.30%	-0.20%	2.90%
Illinois	8.40%	9.50%	7.10%	4.50%	6.90%
Indiana	3.70%	6.60%	2.50%	2.80%	1.10%
Iowa	8.00%	5.80%	4.50%	9.20%	-0.70%
Kansas	6.90%	9.00%	4.70%	1.50%	-7.80%
Kentucky	4.50%	2.50%	2.30%	1.70%	1.70%
Louisiana	7.40%	6.20%	4.60%	1.00%	-7.30%
Maine	19.80%	6.90%	4.20%	-0.90%	5.40%
Maryland	2.30%	6.10%	2.20%	0.10%	3.50%
Massachusetts	-8.00%	3.70%	4.10%	4.10%	3.60%
Michigan	6.70%	5.70%	4.10%	2.70%	2.90%
Minnesota	8.70%	2.40%	2.40%	0.10%	-0.10%
Mississippi	1.50%	-1.00%	2.40%	-9.00%	-5.50%
Missouri	7.60%	2.60%	0.70%	-17.40%	-1.00%

Montana	3.90%	4.60%	0.90%	-1.70%	7.00%
Nebraska	-15.60%	4.40%	0.40%	1.30%	-0.90%
Nevada	6.90%	5.10%	-2.70%	0.10%	-1.00%
New Hampshire	7.40%	4.80%	2.80%	2.10%	1.20%
New Jersey	-0.30%	3.90%	2.20%	5.00%	1.30%
New Mexico	6.60%	5.10%	-4.50%	0.60%	3.10%
New York	9.60%	7.30%	4.50%	1.10%	-1.80%
North Carolina	5.00%	3.50%	2.30%	3.60%	0.10%
North Dakota	11.20%	-2.60%	-0.70%	1.20%	-2.50%
Ohio	4.40%	5.70%	3.90%	1.20%	-1.30%
Oklahoma	3.20%	4.80%	3.00%	2.20%	5.70%
Oregon	-7.90%	3.70%	-2.60%	-1.60%	-6.20%
Pennsylvania	4.40%	6.90%	6.60%	5.10%	0.50%
Rhode Island	3.80%	3.40%	-1.20%	0.10%	-2.40%
South Carolina	2.00%	-3.20%	-0.40%	-0.60%	-4.80%
South Dakota	5.00%	3.10%	2.00%	0.70%	1.00%
Tennessee	-6.80%	3.30%	-0.60%	-9.30%	-3.20%
Texas	16.10%	5.00%	3.70%	0.60%	2.30%
Utah	21.80%	8.10%	5.40%	-2.50%	-6.10%
Vermont	2.30%	0.50%	-1.50%	1.90%	-1.80%
Virginia	7.60%	10.40%	5.30%	2.90%	-1.30%
Washington	3.10%	-3.50%	2.60%	2.40%	-0.60%
West Virginia	3.60%	2.40%	1.30%	3.00%	-2.80%
Wisconsin	7.60%	5.90%	3.10%	2.70%	0.90%
Wyoming	9.90%	4.20%	3.00%	1.10%	-3.90%

Table A.1. Total Medicaid Enrollment in 50 States and the District of Columbia, June 2000 to June 2011, Percent Change (continued)

State	2007-2008	2008-2009	2009-2010	2010-2011
Alabama	4.90%	5.50%	6.40%	6.30%
Alaska	-2.90%	4.30%	15.80%	6.60%
Arizona	5.70%	14.10%	9.00%	0.20%
Arkansas	-1.00%	5.40%	2.40%	3.50%
California	2.20%	5.20%	4.00%	2.60%
Colorado	6.80%	14.80%	12.50%	11.90%
Connecticut	7.20%	6.60%	18.30%	7.70%
Delaware	6.10%	8.90%	8.90%	9.40%
DC	-0.30%	3.70%	11.20%	30.60%
Florida	4.70%	16.30%	11.90%	6.90%
Georgia	3.50%	9.50%	5.10%	3.00%
Hawaii	4.00%	11.50%	9.60%	5.10%
Idaho	0.50%	3.80%	12.20%	6.50%
Illinois	5.90%	7.20%	11.90%	4.70%
Indiana	5.00%	11.20%	4.80%	1.40%
Iowa	6.60%	11.80%	8.80%	5.80%
Kansas	3.50%	4.20%	7.80%	14.10%
Kentucky	0.50%	7.20%	3.50%	2.50%
Louisiana	4.00%	4.50%	8.40%	2.30%
Maine	-2.90%	3.00%	6.70%	1.10%
Maryland	4.70%	20.00%	16.90%	10.00%
Massachusetts	5.60%	4.00%	5.00%	3.50%
Michigan	1.60%	10.40%	11.00%	3.80%
Minnesota	3.20%	9.90%	7.70%	16.30%
Mississippi	4.10%	8.80%	4.00%	2.90%
Missouri	4.60%	3.70%	5.00%	0.90%
Montana	-1.10%	6.60%	11.30%	6.20%
Nebraska	0.10%	7.20%	5.80%	3.00%
Nevada	11.00%	13.00%	23.40%	10.40%
New Hampshire	3.80%	8.50%	5.20%	2.60%
New Jersey	2.60%	4.00%	5.40%	4.90%
New Mexico	13.70%	9.30%	7.70%	-0.30%
New York	0.90%	6.70%	6.90%	4.40%

North Carolina	5.00%	7.50%	2.10%	2.40%
North Dakota	0.40%	13.10%	8.50%	3.20%
Ohio	4.60%	8.70%	8.20%	2.40%
Oklahoma	-0.70%	7.80%	7.00%	4.10%
Oregon	5.20%	10.40%	15.80%	18.90%
Pennsylvania	2.00%	4.80%	4.90%	4.70%
Rhode Island	-3.00%	0.40%	3.90%	3.10%
South Carolina	4.00%	6.00%	1.30%	0.10%
South Dakota	1.30%	4.80%	6.30%	0.90%
Tennessee	1.80%	2.40%	0.00%	1.80%
Texas	0.60%	7.50%	8.30%	7.00%
Utah	2.90%	18.70%	7.80%	10.00%
Vermont	7.20%	7.50%	1.80%	2.70%
Virginia	4.40%	8.20%	9.00%	2.90%
Washington	3.30%	9.10%	7.20%	3.70%
West Virginia	2.40%	4.10%	1.80%	2.90%
Wisconsin	7.70%	14.00%	14.00%	2.20%
Wyoming	-0.70%	10.10%	9.60%	1.10%

1. Source: Kaiser Commission on Medicaid Facts. (2012). Medicaid Enrollment: June 2011 Data Snapshot. June. Available at: http://www.kff.org/medicaid/upload/8050-05.pdf (Accessed: September 21, 2012).

APPENDIX B. Federal Poverty Level for Eligibility (%) for Childless Adults

Table B.1. Federal Poverty Level for Eligibility (%) for Childless Adults [1]

State	Year	Coverage of Childless Adults at Any Time (0=No, 1= Yes)	State Covered Childless Adults (0=No; 1= Yes, but not currently; 2= Yes, currently)	Medicaid Eligibility (%FPL)
Alabama	2004	0	0	0%
Alaska	2004	0	0	0%
Arizona	2004	1	2	100%
Arkansas	2004	0	0	0%
California	2004	0	0	0%
Colorado	2004	0	0	0%
Connecticut	2004	0	0	0%
Delaware	2004	1	2	100%
District of Columbia	2004	0	0	0%
Florida	2004	0	0	0%
Georgia	2004	0	0	0%
Hawaii	2004	1	2	100%
Idaho	2004	0	0	0%
Illinois	2004	0	0	0%
Indiana	2004	1	1	200%
Iowa	2004	1	1	200%
Kansas	2004	0	0	0%
Kentucky	2004	0	0	0%
Louisiana	2004	0	0	0%
Maine	2004	1	2	100%
Maryland	2004	1	2	116%
Massachusetts	2004	0	0	0%
Michigan	2004	0	0	0%
Minnesota	2004	0	0	0%
Mississippi	2004	0	0	0%
Missouri	2004	0	0	0%
Montana	2004	0	0	0%
Nebraska	2004	0	0	0%
Nevada	2004	0	0	0%

New Hampshire	2004	0	0	0%
New Jersey	2004	0	0	0%
New Mexico	2004	1	2	200%
New York	2004	1	2	100%
North Carolina	2004	0	0	0%
North Dakota	2004	0	0	0%
Ohio	2004	0	0	0%
Oklahoma	2004	1	1	200%
Oregon	2004	1	2	100%
Pennsylvania	2004	0	0	0%
Rhode Island	2004	0	0	0%
South Carolina	2004	0	0	0%
South Dakota	2004	0	0	0%
Tennessee	2004	0	0	0%
Texas	2004	0	0	0%
Utah	2004	1	2	150%
Vermont	2004	1	1	200%
Virginia	2004	0	0	0%
Washington	2004	0	0	0%
West Virginia	2004	0	0	0%
Wisconsin	2004	1	1	200%
Wyoming	2004	0	0	0%

Table B.1. Federal Poverty Level for Eligibility (%) for Childless Adults (continued)

State	Year	Coverage of Childless Adults at Any Time (0=No, 1= Yes)	State Covered Childless Adults (0=No; 1= Yes, but not currently; 2= Yes, currently)	Medicaid Eligibility (%FPL)
Alabama	2005	0	0	0%
Alaska	2005	0	0	0%
Arizona	2005	1	2	100%
Arkansas	2005	0	0	0%
California	2005	0	0	0%
Colorado	2005	0	0	0%
Connecticut	2005	0	0	0%
Delaware	2005	1	2	100%
District of Columbia	2005	0	0	0%
Florida	2005	0	0	0%
Georgia	2005	0	0	0%
Hawaii	2005	1	2	100%
Idaho	2005	0	0	0%
Illinois	2005	0	0	0%
Indiana	2005	1	1	200%
Iowa	2005	1	2	200%
Kansas	2005	0	0	0%
Kentucky	2005	0	0	0%
Louisiana	2005	0	0	0%
Maine	2005	1	2	100%
Maryland	2005	1	2	116%
Massachusetts	2005	0	0	0%
Michigan	2005	0	0	0%
Minnesota	2005	0	0	0%
Mississippi	2005	0	0	0%
Missouri	2005	0	0	0%
Montana	2005	0	0	0%
Nebraska	2005	0	0	0%
Nevada	2005	0	0	0%
New Hampshire	2005	0	0	0%
New Jersey	2005	0	0	0%
New Mexico	2005	1	2	200%

New York	2005	1	2	100%
North Carolina	2005	0	0	0%
North Dakota	2005	0	0	0%
Ohio	2005	0	0	0%
Oklahoma	2005	1	2	200%
Oregon	2005	1	2	100%
Pennsylvania	2005	0	0	0%
Rhode Island	2005	0	0	0%
South Carolina	2005	0	0	0%
South Dakota	2005	0	0	0%
Tennessee	2005	0	0	0%
Texas	2005	0	0	0%
Utah	2005	1	2	150%
Vermont	2005	1	2	200%
Virginia	2005	0	0	0%
Washington	2005	0	0	0%
West Virginia	2005	0	0	0%
Wisconsin	2005	1	1	200%
Wyoming	2005	0	0	0%

Table B.1. Federal Poverty Level for Eligibility (%) for Childless Adults (continued)

State	Year	Coverage of Childless Adults at Any Time (0=No, 1= Yes)	State Covered Childless Adults (0=No; 1= Yes, but not currently; 2= Yes, currently)	Medicaid Eligibility (%FPL)
Alabama	2006	0	0	0%
Alaska	2006	0	0	0%
Arizona	2006	1	2	100%
Arkansas	2006	0	0	0%
California	2006	0	0	0%
Colorado	2006	0	0	0%
Connecticut	2006	0	0	0%
Delaware	2006	1	2	100%
District of Columbia	2006	0	0	0%
Florida	2006	0	0	0%
Georgia	2006	0	0	0%
Hawaii	2006	1	2	100%
Idaho	2006	0	0	0%
Illinois	2006	0	0	0%
Indiana	2006	1	1	200%
Iowa	2006	1	2	200%
Kansas	2006	0	0	0%
Kentucky	2006	0	0	0%
Louisiana	2006	0	0	0%
Maine	2006	1	2	100%
Maryland	2006	1	2	116%
Massachusetts	2006	0	0	0%
Michigan	2006	0	0	0%
Minnesota	2006	0	0	0%
Mississippi	2006	0	0	0%
Missouri	2006	0	0	0%
Montana	2006	0	0	0%
Nebraska	2006	0	0	0%
Nevada	2006	0	0	0%
New Hampshire	2006	0	0	0%
New Jersey	2006	0	0	0%
New Mexico	2006	1	2	200%

New York	2006	1	2	100%
North Carolina	2006	0	0	0%
North Dakota	2006	0	0	0%
Ohio	2006	0	0	0%
Oklahoma	2006	1	2	200%
Oregon	2006	1	2	100%
Pennsylvania	2006	0	0	0%
Rhode Island	2006	0	0	0%
South Carolina	2006	0	0	0%
South Dakota	2006	0	0	0%
Tennessee	2006	0	0	0%
Texas	2006	0	0	0%
Utah	2006	1	2	150%
Vermont	2006	1	2	200%
Virginia	2006	0	0	0%
Washington	2006	0	0	0%
West Virginia	2006	0	0	0%
Wisconsin	2006	1	1	200%
Wyoming	2006	0	0	0%

Table B.1. Federal Poverty Level for Eligibility (%) for Childless Adults (continued)

State	Year	Coverage of Childless Adults at Any Time (0=No, 1= Yes)	State Covered Childless Adults (0=No; 1= Yes, but not currently; 2= Yes, currently)	Medicaid Eligibility (%FPL)
Alabama	2007	0	0	0%
Alaska	2007	0	0	0%
Arizona	2007	1	2	100%
Arkansas	2007	0	0	0%
California	2007	0	0	0%
Colorado	2007	0	0	0%
Connecticut	2007	0	0	0%
Delaware	2007	1	2	100%
District of Columbia	2007	0	0	0%
Florida	2007	0	0	0%
Georgia	2007	0	0	0%
Hawaii	2007	1	2	100%
Idaho	2007	0	0	0%
Illinois	2007	0	0	0%
Indiana	2007	1	1	200%
Iowa	2007	1	2	200%
Kansas	2007	0	0	0%
Kentucky	2007	0	0	0%
Louisiana	2007	0	0	0%
Maine	2007	1	2	100%
Maryland	2007	1	2	116%
Massachusetts	2007	0	0	0%
Michigan	2007	0	0	0%
Minnesota	2007	0	0	0%
Mississippi	2007	0	0	0%
Missouri	2007	0	0	0%
Montana	2007	0	0	0%
Nebraska	2007	0	0	0%
Nevada	2007	0	0	0%
New Hampshire	2007	0	0	0%
New Jersey	2007	0	0	0%
New Mexico	2007	1	2	200%

New York	2007	1	2	100%
North Carolina	2007	0	0	0%
North Dakota	2007	0	0	0%
Ohio	2007	0	0	0%
Oklahoma	2007	1	2	200%
Oregon	2007	1	2	100%
Pennsylvania	2007	0	0	0%
Rhode Island	2007	0	0	0%
South Carolina	2007	0	0	0%
South Dakota	2007	0	0	0%
Tennessee	2007	0	0	0%
Texas	2007	0	0	0%
Utah	2007	1	2	150%
Vermont	2007	1	2	200%
Virginia	2007	0	0	0%
Washington	2007	0	0	0%
West Virginia	2007	0	0	0%
Wisconsin	2007	1	1	200%
Wyoming	2007	0	0	0%

Table B.1. Federal Poverty Level for Eligibility (%) for Childless Adults (continued)

State	Year	Coverage of Childless Adults at Any Time (0=No, 1= Yes)	State Covered Childless Adults (0=No; 1= Yes, but not currently; 2= Yes, currently)	Medicaid Eligibility (%FPL)
Alabama	2008	0	0	0%
Alaska	2008	0	0	0%
Arizona	2008	1	2	100%
Arkansas	2008	0	0	0%
California	2008	0	0	0%
Colorado	2008	0	0	0%
Connecticut	2008	0	0	0%
Delaware	2008	1	2	100%
District of Columbia	2008	0	0	0%
Florida	2008	0	0	0%
Georgia	2008	0	0	0%
Hawaii	2008	1	2	100%
Idaho	2008	0	0	0%
Illinois	2008	0	0	0%
Indiana	2008	1	2	200%
Iowa	2008	1	2	200%
Kansas	2008	0	0	0%
Kentucky	2008	0	0	0%
Louisiana	2008	0	0	0%
Maine	2008	1	2	100%
Maryland	2008	1	2	116%
Massachusetts	2008	0	0	0%
Michigan	2008	0	0	0%
Minnesota	2008	0	0	0%
Mississippi	2008	0	0	0%
Missouri	2008	0	0	0%
Montana	2008	0	0	0%
Nebraska	2008	0	0	0%
Nevada	2008	0	0	0%
New Hampshire	2008	0	0	0%
New Jersey	2008	0	0	0%
New Mexico	2008	1	2	200%

New York	2008	1	2	100%
North Carolina	2008	0	0	0%
North Dakota	2008	0	0	0%
Ohio	2008	0	0	0%
Oklahoma	2008	1	2	200%
Oregon	2008	1	2	100%
Pennsylvania	2008	0	0	0%
Rhode Island	2008	0	0	0%
South Carolina	2008	0	0	0%
South Dakota	2008	0	0	0%
Tennessee	2008	0	0	0%
Texas	2008	0	0	0%
Utah	2008	1	2	150%
Vermont	2008	1	2	200%
Virginia	2008	0	0	0%
Washington	2008	0	0	0%
West Virginia	2008	0	0	0%
Wisconsin	2008	1	1	200%
Wyoming	2008	0	0	0%

Table B.1. Federal Poverty Level for Eligibility (%) for Childless Adults (continued)

State	Year	Coverage of Childless Adults at Any Time (0=No, 1= Yes)	State Covered Childless Adults (0=No; 1= Yes, but not currently; 2= Yes, currently)	Medicaid Eligibility (%FPL)
Alabama	2009	0	0	0%
Alaska	2009	0	0	0%
Arizona	2009	1	2	100%
Arkansas	2009	0	0	0%
California	2009	0	0	0%
Colorado	2009	0	0	0%
Connecticut	2009	0	0	0%
Delaware	2009	1	2	100%
District of Columbia	2009	0	0	0%
Florida	2009	0	0	0%
Georgia	2009	0	0	0%
Hawaii	2009	1	2	100%
Idaho	2009	0	0	0%
Illinois	2009	0	0	0%
Indiana	2009	1	2	200%
Iowa	2009	1	2	200%
Kansas	2009	0	0	0%
Kentucky	2009	0	0	0%
Louisiana	2009	0	0	0%
Maine	2009	1	2	100%
Maryland	2009	1	2	116%
Massachusetts	2009	0	0	0%
Michigan	2009	0	0	0%
Minnesota	2009	0	0	0%
Mississippi	2009	0	0	0%
Missouri	2009	0	0	0%
Montana	2009	0	0	0%
Nebraska	2009	0	0	0%
Nevada	2009	0	0	0%
New Hampshire	2009	0	0	0%
New Jersey	2009	0	0	0%
New Mexico	2009	1	2	200%

New York	2009	1	2	100%
North Carolina	2009	0	0	0%
North Dakota	2009	0	0	0%
Ohio	2009	0	0	0%
Oklahoma	2009	1	2	200%
Oregon	2009	1	2	100%
Pennsylvania	2009	0	0	0%
Rhode Island	2009	0	0	0%
South Carolina	2009	0	0	0%
South Dakota	2009	0	0	0%
Tennessee	2009	0	0	0%
Texas	2009	0	0	0%
Utah	2009	1	2	150%
Vermont	2009	1	2	200%
Virginia	2009	0	0	0%
Washington	2009	0	0	0%
West Virginia	2009	0	0	0%
Wisconsin	2009	1	2	200%
Wyoming	2009	0	0	0%

Table B.1. Federal Poverty Level for Eligibility (%) for Childless Adults (continued)

State	Year	Coverage of Childless Adults at Any Time (0=No, 1= Yes)	State Covered Childless Adults (0=No; 1= Yes, but not currently; 2= Yes, currently)	Medicaid Eligibility (%FPL)
Alabama	2010	0	0	0%
Alaska	2010	0	0	0%
Arizona	2010	1	2	100%
Arkansas	2010	0	0	0%
California	2010	0	0	0%
Colorado	2010	0	0	0%
Connecticut	2010	0	0	0%
Delaware	2010	1	2	100%
District of Columbia	2010	0	0	0%
Florida	2010	0	0	0%
Georgia	2010	0	0	0%
Hawaii	2010	1	2	100%
Idaho	2010	0	0	0%
Illinois	2010	0	0	0%
Indiana	2010	1	2	200%
Iowa	2010	1	2	200%
Kansas	2010	0	0	0%
Kentucky	2010	0	0	0%
Louisiana	2010	0	0	0%
Maine	2010	1	2	100%
Maryland	2010	1	2	116%
Massachusetts	2010	0	0	0%
Michigan	2010	0	0	0%
Minnesota	2010	0	0	0%
Mississippi	2010	0	0	0%
Missouri	2010	0	0	0%
Montana	2010	0	0	0%
Nebraska	2010	0	0	0%
Nevada	2010	0	0	0%
New Hampshire	2010	0	0	0%
New Jersey	2010	0	0	0%
New Mexico	2010	1	2	200%

New York	2010	1	2	100%
North Carolina	2010	0	0	0%
North Dakota	2010	0	0	0%
Ohio	2010	0	0	0%
Oklahoma	2010	1	2	200%
Oregon	2010	1	2	100%
Pennsylvania	2010	0	0	0%
Rhode Island	2010	0	0	0%
South Carolina	2010	0	0	0%
South Dakota	2010	0	0	0%
Tennessee	2010	0	0	0%
Texas	2010	0	0	0%
Utah	2010	1	2	150%
Vermont	2010	1	2	200%
Virginia	2010	0	0	0%
Washington	2010	0	0	0%
West Virginia	2010	0	0	0%
Wisconsin	2010	1	2	200%
Wyoming	2010	0	0	0%

APPENDIX C. Federal Poverty Level for Eligibility (%) for Parents

Table C.1. Federal Poverty Level for Eligibility (%) for Parents [2, 3, 4, 5, 6, 7, 8]

State	2003 NWP	2003 WP	2004 NWP	2004 WP	2005 NWP	2005 WP
Alaska	76%	81%	75%	81%	75%	81%
Alabama	13%	20%	13%	19%	12%	19%
Arkansas	16%	20%	16%	20%	15%	19%
Arizona	200%	200%	200%	200%	200%	200%
California	100%	107%	100%	107%	100%	107%
Colorado	40%	47%	32%	39%	31%	38%
Connecticut	100%	107%	100%	107%	150%	157%
District of Columbia	200%	200%	200%	200%	200%	200%
Delaware	100%	120%	100%	117%	100%	107%
Florida	24%	63%	23%	62%	23%	60%
Georgia	33%	59%	32%	58%	32%	56%
Hawaii	100%	100%	100%	100%	100%	100%
Iowa	33%	84%	33%	82%	32%	79%
Idaho	25%	32%	24%	31%	24%	30%
Illinois	49%	83%	133%	140%	185%	192%
Indiana	23%	30%	22%	29%	21%	28%
Kansas	32%	39%	31%	38%	30%	37%
Kentucky	41%	71%	40%	70%	39%	68%
Louisiana	14%	21%	13%	20%	13%	20%
Massachusetts	133%	133%	133%	133%	133%	133%
Maryland	34%	41%	33%	40%	32%	39%
Maine	150%	157%	150%	157%	150%	157%
Michigan	36%	61%	35%	59%	34%	58%
Minnesota	275%	275%	275%	275%	275%	275%
Missouri	77%	84%	75%	82%	22%	42%
Mississippi	29%	36%	28%	35%	27%	34%
Montana	39%	67%	38%	65%	37%	64%
North Carolina	43%	59%	42%	57%	41%	56%
North Dakota	40%	94%	40%	69%	39%	67%
Nebraska	49%	57%	48%	56%	48%	60%
New Hampshire	49%	61%	48%	60%	47%	58%

New Jersey	35%	42%	34%	41%	100%	100%
New Mexico	31%	71%	30%	69%	29%	67%
Nevada	27%	88%	27%	87%	26%	84%
New York	150%	150%	150%	150%	150%	150%
Ohio	100%	100%	100%	100%	90%	90%
Oklahoma	37%	46%	36%	45%	35%	44%
Oregon	100%	100%	100%	100%	100%	100%
Pennsylvania	33%	66%	33%	66%	31%	63%
Rhode Island	185%	192%	185%	192%	185%	192%
South Carolina	49%	98%	49%	97%	49%	97%
South Dakota	63%	63%	61%	61%	59%	59%
Tennessee	100%	100%	100%	100%	70%	81%
Texas	15%	34%	14%	33%	14%	30%
Utah	46%	53%	46%	53%	43%	50%
Virginia	30%	37%	24%	36%	24%	31%
Vermont	185%	192%	185%	192%	185%	192%
Washington	43%	86%	43%	86%	41%	81%
Wisconsin	185%	185%	185%	192%	185%	192%
West Virginia	20%	39%	19%	38%	19%	37%
Wyoming	46%	62%	45%	60%	44%	59%

Table C.2. Federal Poverty Level for Eligibility (%) for Parents

State	2006 NWP	2006 WP	2008 NWP	2008 WP	2009 NWP	2009 WP	2010
Alaska	76%	81%	76%	81%	80%	85%	81%
Alabama	12%	26%	11%	26%	11%	25%	24%
Arkansas	15%	18%	14%	18%	14%	17%	200%
Arizona	200%	200%	200%	200%	200%	200%	106%
California	100%	107%	100%	106%	100%	106%	106%
Colorado	60%	67%	60%	66%	60%	66%	66%
Connecticut	150%	157%	185%	191%	185%	191%	300%
District of Columbia	200%	207%	200%	207%	200%	207%	207%
Delaware	100%	107%	100%	106%	75%	121%	121%
Florida	22%	58%	21%	56%	21%	55%	53%
Georgia	31%	55%	30%	53%	29%	52%	50%
Hawaii	100%	100%	100%	100%	100%	100%	200%
Iowa	31%	77%	30%	89%	29%	86%	250%
Idaho	23%	43%	22%	42%	22%	28%	185%
Illinois	185%	192%	185%	191%	185%	185%	185%
Indiana	21%	27%	20%	26%	20%	26%	200%
Kansas	29%	36%	28%	34%	27%	34%	32%
Kentucky	38%	66%	37%	64%	36%	62%	62%
Louisiana	14%	20%	13%	20%	12%	26%	25%
Massachusetts	133%	133%	133%	133%	133%	133%	133%
Maryland	31%	38%	30%	37%	116%	116%	116%
Maine	200%	207%	200%	206%	200%	206%	206%
Michigan	38%	61%	38%	61%	39%	66%	64%
Minnesota	275%	275%	275%	275%	275%	275%	275%
Missouri	21%	40%	20%	39%	20%	26%	25%
Mississippi	27%	33%	26%	32%	25%	46%	44%
Montana	35%	62%	34%	60%	33%	58%	56%
North Carolina	39%	54%	38%	52%	37%	51%	49%
North Dakota	38%	65%	37%	63%	45%	62%	59%
Nebraska	46%	58%	48%	59%	46%	58%	58%
New Hampshire	45%	56%	44%	55%	41%	51%	49%
New Jersey	115%	115%	133%	133%	200%	200%	200%
New Mexico	28%	65%	27%	63%	30%	69%	250%
Nevada	25%	86%	27%	94%	26%	91%	200%
New York	150%	150%	150%	150%	150%	150%	150%
Ohio	90%	90%	90%	90%	90%	90%	90%

Oklahoma	34%	43%	33%	50%	32%	48%	200%
Oregon	100%	100%	100%	100%	100%	100%	185%
Pennsylvania	30%	61%	29%	59%	27%	36%	34%
Rhode Island	185%	192%	185%	191%	175%	181%	181%
South Carolina	48%	97%	50%	100%	49%	90%	89%
South Dakota	58%	58%	56%	56%	54%	54%	52%
Tennessee	70%	80%	69%	80%	73%	134%	$55,000/ year
Texas	14%	29%	13%	28%	13%	27%	26%
Utah	42%	49%	41%	47%	40%	68%	44%
Virginia	24%	31%	24%	31%	24%	30%	29%
Vermont	185%	192%	185%	191%	185%	191%	191%
Washington	39%	79%	38%	76%	38%	77%	74%
Wisconsin	185%	192%	185%	191%	200%	200%	200%
West Virginia	18%	36%	18%	35%	17%	34%	33%
Wyoming	43%	57%	41%	55%	40%	54%	52%

*Initial expansion year; **CA is Childless Adult; ***WP is Working Parent; ****NWP is Non-Working Parent
#Waiver program, limited coverage program, and/or premium assistance program
~The state also has a premium subsidy plan, called Catamount Health that is offered to parents and childless adults up to 300 percent of the federal poverty guidelines.
Sources:

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APPENDIX D. Comparison of Weighted and Unweighted Anaylsis

Note: All weighted analysis was carried out in SAS survey , as weighted mixed models did not coverge (using Stata's xtmelogit). All unweighted analysis was carried out in SAS Proc Glimmix.

Table D.1. Self-Reported Health Status (predicting fair/poor health versus good, excellent, or very good)

	Weighted Analysis		Unweighted Anaysis	
	Estimate	Standard Error	Estimate	Standard Error
Intercept	-1.488*	0.009	-1.540*	0.040
Race				
Other	0.322*	0.015	0.519*	0.008
AIAN	0.478*	0.023	0.680*	0.010
Asian	-0.753*	0.026	-0.367*	0.015
Black	0.185*	0.012	0.465*	0.005
White (ref.)	0.000	.	0.000	.

Table D.2. Self-Reported Forgone Medical Care (predicting a time in the past 12 months when you needed to see a doctor but could not because of cost)

	Weighted Analysis		Unweighted Anaysis	
	Estimate	Standard Error	Estimate	Standard Error
Intercept	-1.561*	0.010	-2.180*	0.038
Race				
Other	0.394*	0.076	0.900*	0.008
AIAN	0.353*	0.077	0.766*	0.012
Asian	-0.507*	0.076	0.008	0.017
Black	0.172*	0.052	0.673*	0.006
White (ref.)	0.000	.	0.000	.

Table D.3. Self-Reported Poor Mental Health Days (predicting one or more days during the past 30 days was your mental health not good)

	Weighted Analysis		Unweighted Anaysis	
	Estimate	Standard Error	Estimate	Standard Error
Intercept	-0.645*	0.008	-0.797*	0.018
Race				
Other	-0.077*	0.014	0.060*	0.007
AIAN	0.347*	0.021	0.408*	0.010
Asian	-0.294*	0.019	-0.277*	0.011
Black	0.043*	0.011	0.159*	0.005
White (ref.)	0.000	.	0.000	.

Table D.4. Odds Ratios for Poor Physical Health Days (predicting one or more days during the past 30 days was your physical health not good)

	Weighted Analysis		Unweighted Anaysis	
	Estimate	Standard Error	Estimate	Standard Error
Intercept	-0.600*	0.008	-0.552*	0.014
Race				
Other	-0.097*	0.014	-0.045*	0.007
AIAN	0.341*	0.020	0.335*	0.010
Asian	-0.328*	0.019	-0.366*	0.011
Black	0.065*	0.010	0.132*	0.005
White (ref.)	0.000	.	0.000	.

APPENDIX E. Models 1 – 6 including Gini, Medicaid Generosity for Parents and Medicaid Generosity for Childless Adults, for each of our four outcomes

Self-Reported Health Status

Table E.1A. Factors associated with self reported health status among working age adults, 2004 – 2010 BRFSS

	Model 1: **Coef(SE)**		Model 2:		**Model 3**	
Intercept	**-1.567**	0.040	**-3.506**	0.020	**-3.972**	0.024
Fixed Effects						
Race						
Other	**0.532**	0.010	**0.384**	0.013	**0.579**	0.014
AIAN	**0.660**	0.014	**0.419**	0.018	**0.354**	0.020
Asian	**-0.379**	0.021	0.010	0.028	**0.307**	0.029
Black	**0.427**	0.007	**0.173**	0.010	**0.253**	0.011
White (ref.)	0.000	.	0.000	.	0.000	.
Time Period						
Recovery	**0.088**	0.005	0.021	0.007	**-0.040**	0.008
Recession	**0.040**	0.004	0.030	0.006	-0.006	0.006
Pre-Recession (ref.)	0.000	.	0.000	.	0.000	.
Time-Period*Race						
Recovery*Other	**-0.061**	0.024	-0.046	0.031	**-0.076**	0.034
Recession*Other	-0.004	0.017	-0.023	0.022	**-0.054**	0.023
Pre-Recession*Other	0.000	.	0.000	.	0.000	.
Recovery*AIAN	**0.062**	0.028	0.037	0.037	0.054	0.041
Recession*AIAN	0.029	0.023	-0.034	0.030	-0.051	0.033
Pre-Recession*AIAN	0.000	.	0.000	.	0.000	.
Recovery*Asian	**0.040**	0.039	-0.018	0.053	-0.023	0.056
Recession*Asian	0.012	0.033	-0.016	0.043	-0.025	0.046
Pre-Recession*Asian	0.000	.	0.000	.	0.000	.
Recovery*Black	**0.083**	0.014	0.**043**	0.020	**0.063**	0.022
Recession*Black	**0.077**	0.012	0.025	0.016	0.017	0.018
Pre-Recession*Black	0.000	.	0.000	.	0.000	.
Recovery*White	0.000	.	0.000	.	0.000	.
Recession*White	0.000	.	0.000	.	0.000	.

Pre-Recession*White	0.000	.	0.000	.	0.000	.
Predisposing and Enabling Characteristics						
Sex						
Male			**0.140**	0.005	**0.053**	0.005
Female			0.000	.	0.000	.
Age			**0.034**	0.000	**0.019**	0.000
Income						
Missing/Don't Know			**0.746**	0.008	**0.629**	0.009
< $15,000			**1.770**	0.008	**1.279**	0.009
$15 – 25,000			**1.280**	0.007	**0.983**	0.008
$25 – 35,000			**0.820**	0.008	**0.654**	0.009
$35 – 50,000			**0.504**	0.008	**0.400**	0.008
>$50,000 (ref.)			0.000	.	0.000	.
Education						
Some High School			**1.257**	0.008	**1.356**	0.009
High School Graduate			**0.668**	0.007	**0.704**	0.007
Some College			**0.493**	0.007	**0.407**	0.007
College Graduate (ref.)			0.000	.	0.000	.
Insurance						
Not Insured			-0.007	0.006	**0.191**	0.007
Insured (ref.)			0.000	.	0.000	.
Employment						
Unemployed			**0.558**	0.008	**0.293**	0.009
Neither Employed or Unemployed			**1.043**	0.005	**0.555**	0.006
Employed (ref.)			0.000	.	0.000	.
Rurality						
Non-Metro			**0.032**	0.006	**0.043**	0.006
MISSING			**0.032**	0.008	**0.076**	0.008
Metro			0.000	.	0.000	.
Need characteristics						
Disability						
Disabled					**1.933**	0.005
Not Disabled					0.000	.
Diabetes						
Diabetes					**1.317**	0.007
No Diabetes					0.000	.

Random Effects:						
State (Intercept)	0.084	0.017	0.019	0.004	0.026	0.005

Note: Bolded type face indicates significant ≤ .05 (p-value)

Table E.1B. Factors associated with self reported health status among working age adults, 2004 – 2010 BRFSS

	Model 4: Coef(SE)		Model 5:		Model 6	
Intercept	**-4.315**	0.072	**-4.331**	0.071	**-4.331**	0.071
Fixed Effects						
Race						
Other	**0.612**	0.014	**0.660**	0.024	**0.662**	0.029
AIAN	**0.355**	0.020	**0.418**	0.030	**0.450**	0.036
Asian	**0.314**	0.029	**0.476**	0.038	**0.496**	0.042
Black	**0.253**	0.011	**0.347**	0.028	**0.286**	0.037
White (ref.)	0.000	.	0.000	.	0.000	.
Time Period						
Recovery	**-0.046**	0.012	**-0.037**	0.016	**-0.039**	0.017
Recession	-0.008	0.008	0.014	0.012	0.014	0.013
Pre-Recession (ref.)	0.000	.	0.000	.	0.000	.
Time-Period*Race						
Recession*Other	**-0.083**	0.035	**-0.080**	0.035	-0.055	0.066
Recovery*Other	-0.042	0.024	-0.038	0.024	-0.058	0.050
Pre-Recession*Other	0.000	.	0.000	.	0.000	.
Recession*AIAN	0.055	0.041	0.053	0.041	-0.003	0.076
Recovery*AIAN	-0.051	0.033	-0.049	0.033	**-0.128**	0.060
Pre-Recession*AIAN	0.000	.	0.000	.	0.000	.
Recession*Asian	-0.023	0.056	-0.011	0.057	-0.074	0.083
Recovery*Asian	-0.026	0.046	-0.029	0.046	-0.063	0.065
Pre-Recession*Asian	0.000	.	0.000	.	0.000	.
Recession*Black	**0.064**	0.022	**0.067**	0.022	**0.178**	0.070
Recovery*Black	0.018	0.018	0.026	0.018	**0.159**	0.059
Pre-Recession*Black	0.000	.	0.000	.	0.000	.
Recession*White	0.000	.	0.000	.	0.000	.
Recovery*White	0.000	.	0.000	.	0.000	.
Pre-Recession*White	0.000	.	0.000	.	0.000	.
Predisposing and Enabling Characteristics						
Sex						
Male	**0.061**	0.005	**0.061**	0.005	**0.061**	0.005

Female	0.000	.	0.000	.	0.000	.
Age	**0.018**	0.000	**0.018**	0.000	**0.018**	0.000
Income						
Missing/Don't Know	**0.622**	0.009	**0.622**	0.009	**0.622**	0.009
< $15,000	**1.278**	0.009	**1.278**	0.009	**1.278**	0.009
$15 – 25,000	**0.978**	0.008	**0.978**	0.008	**0.979**	0.008
$25 – 35,000	**0.650**	0.009	**0.650**	0.009	**0.650**	0.009
$35 – 50,000	**0.398**	0.008	**0.399**	0.008	**0.399**	0.008
>$50,000 (ref.)	0.000	.	0.000	.	0.000	.
Education						
Some High School	**1.360**	0.009	**1.358**	0.009	**1.358**	0.009
High School Graduate	**0.705**	0.007	**0.704**	0.007	**0.704**	0.007
Some College	**0.410**	0.007	**0.410**	0.007	**0.410**	0.007
College Graduate (ref.)	0.000	.	0.000	.	0.000	.
Insurance						
Not Insured	**0.192**	0.007	**0.192**	0.007	**0.192**	0.007
Insured (ref.)	0.000	.	0.000	.	0.000	.
Employment						
Unemployed	**0.294**	0.009	**0.294**	0.009	**0.294**	0.009
Neither Employed or Unemployed	**0.560**	0.006	**0.560**	0.006	**0.560**	0.006
Employed (ref.)	0.000	.	0.000	.	0.000	.
Rurality						
Non-Metro	**0.043**	0.006	**0.046**	0.006	**0.046**	0.006
MISSING	**0.075**	0.008	**0.076**	0.008	**0.076**	0.008
Metro	0.000	.	0.000	.	0.000	.
Need characteristics						
Disability						
Disabled	**1.938**	0.005	**1.938**	0.005	**1.938**	0.005
Not Disabled	0.000	.	0.000	.	0.000	.
Diabetes						
Diabetes	**1.316**	0.007	**1.316**	0.007	**1.316**	0.007
No Diabetes	0.000	.	0.000	.	0.000	.
Random Effects:						
State (Intercept)	0.009	0.002	0.009	0.002	0.009	0.002

GINI Q1	**0.085**	0.042	**0.121**	0.042	**0.125**	0.042
GINI Q2	**0.152**	0.039	**0.188**	0.039	**0.184**	0.039
GINI Q3	0.006	0.038	0.034	0.038	0.035	0.038
GINI Q4	0.000	.	0.000	.	0.000	.
Poverty Rate	**1.363**	0.401	**1.308**	0.393	**1.305**	0.392
Unemployment Rate	0.001	0.002	0.002	0.002	0.002	0.002
OTHER*GINI Q1			-0.053	0.030	-0.053	0.038
OTHER*GINI Q2			-0.002	0.032	0.034	0.041
OTHER*GINI Q3			**-0.129**	0.032	**-0.176**	0.041
OTHER*GINI Q4			0.000	.	0.000	.
AIAN*GINI Q1			0.003	0.049	-0.035	0.066
AIAN*GINI Q2			**-0.108**	0.040	**-0.175**	0.054
AIAN*GINI Q3			**-0.118**	0.038	**-0.150**	0.051
AIAN*GINI Q4			0.000	.	0.000	.
ASIAN*GINI Q1			**-0.348**	0.060	**-0.329**	0.081
ASIAN*GINI Q2			**-0.244**	0.054	**-0.398**	0.078
ASIAN*GINI Q3			**-0.221**	0.070	-0.165	0.093
ASIAN*GINI Q4			0.000	.	0.000	.
BLACK*GINI Q1			**-0.125**	0.030	**-0.084**	0.041
BLACK*GINI Q2			**-0.115**	0.030	-0.024	0.041
BLACK*GINI Q3			-0.046	0.033	0.031	0.046
BLACK*GINI Q4			0.000	.	0.000	.
WHITE*GINI Q1			0.000	.	0.000	.
WHITE*GINI Q2			0.000	.	0.000	.
WHITE*GINI Q3			0.000	.	0.000	.
WHITE*GINI Q4			0.000	.	0.000	.
RECOVERY*GINI Q1			-0.004	0.020	-0.006	0.022
RECOVERY*GINI Q2			-0.034	0.020	-0.025	0.022
RECOVERY*GINI Q3			-0.004	0.021	-0.005	0.023
RECOVERY*GINI Q4			0.000	.	0.000	.
RECESSION*GINI Q1			**-0.034**	0.017	**-0.043**	0.019
RECESSION*GINI Q2			**-0.039**	0.016	-0.030	0.017
RECESSION*GINI Q3			-0.027	0.016	-0.029	0.018

RECESSION*GINI Q4			0.000	.	0.000	.
PRE-RECESSION *GINI Q1			0.000	.	0.000	.
PRE-RECESSION *GINI Q2			0.000	.	0.000	.
PRE-RECESSION *GINI Q3			0.000	.	0.000	.
PRE-RECESSION *GINI Q4			0.000	.	0.000	.
OTHER *PRE-RECESSION *GINI Q1					-0.142	0.102
OTHER* PRE-RECESSION* GINI Q2					-0.106	0.099
OTHER *PRE-RECESSION *GINI Q3					0.105	0.095
OTHER *PRE-RECESSION *GINI Q4					0.000	.
OTHER *PRE-RECESSION *GINI Q1					0.042	0.067
OTHER *PRE-RECESSION *GINI Q2					-0.089	0.072
OTHER *PRE-RECESSION *GINI Q3					0.117	0.070
OTHER *PRE-RECESSION *GINI Q4					0.000	.
OTHER *PRE-RECESSION *GINI Q1					0.000	.

OTHER *PRE-RECESSION *GINI Q2					0.000	.
OTHER *PRE-RECESSION *GINI Q3					0.000	.
OTHER *PRE-RECESSION *GINI Q4					0.000	.
AIAN *PRE-RECESSION *GINI Q1					0.005	0.132
AIAN * PRE-RECESSION* GINI Q2					0.190	0.114
AIAN *PRE-RECESSION *GINI Q3					0.037	0.106
AIAN *PRE-RECESSION *GINI Q4					0.000	.
AIAN *PRE-RECESSION *GINI Q1					0.146	0.116
AIAN *PRE-RECESSION *GINI Q2					0.132	0.090
AIAN *PRE-RECESSION *GINI Q3					0.091	0.083
AIAN *PRE-RECESSION *GINI Q4					0.000	.
AIAN					0.000	.

*PRE-RECESSION *GINI Q1						
AIAN *PRE-RECESSION *GINI Q2					0.000	.
AIAN *PRE-RECESSION *GINI Q3					0.000	.
AIAN *PRE-RECESSION *GINI Q4					0.000	.
ASIAN *PRE-RECESSION *GINI Q1					-0.086	0.161
ASIAN * PRE-RECESSION* GINI Q2					**0.305**	0.140
ASIAN *PRE-RECESSION *GINI Q3					0.076	0.195
ASIAN *PRE-RECESSION *GINI Q4					0.000	.
ASIAN *PRE-RECESSION *GINI Q1					-0.007	0.133
ASIAN *PRE-RECESSION *GINI Q2					**0.270**	0.117
ASIAN *PRE-RECESSION *GINI Q3					-0.229	0.158
ASIAN					0.000	.

*PRE-RECESSION *GINI Q4						
ASIAN *PRE-RECESSION *GINI Q1					0.000	.
ASIAN *PRE-RECESSION *GINI Q2					0.000	.
ASIAN *PRE-RECESSION *GINI Q3					0.000	.
ASIAN *PRE-RECESSION *GINI Q4					0.000	.
BLACK *PRE-RECESSION *GINI Q1					-0.064	0.078
BLACK * PRE-RECESSION* GINI Q2					**-0.186**	0.080
BLACK *PRE-RECESSION *GINI Q3					-0.157	0.089
BLACK *PRE-RECESSION *GINI Q4					0.000	.
BLACK *PRE-RECESSION *GINI Q1					-0.096	0.066
BLACK *PRE-RECESSION *GINI Q2					**-0.193**	0.066
BLACK					-0.163	0.073

*PRE-RECESSION *GINI Q3						
BLACK *PRE-RECESSION *GINI Q4					0.000	.
BLACK *PRE-RECESSION *GINI Q1					0.000	.
BLACK *PRE-RECESSION *GINI Q2					0.000	.
BLACK *PRE-RECESSION *GINI Q3					0.000	.
BLACK *PRE-RECESSION *GINI Q4					0.000	.
WHITE *PRE-RECESSION *GINI Q1					0.000	.
WHITE * PRE-RECESSION* GINI Q2					0.000	.
WHITE *PRE-RECESSION *GINI Q3					0.000	.
WHITE *PRE-RECESSION *GINI Q4					0.000	.
WHITE *PRE-RECESSION *GINI Q1					0.000	.
WHITE					0.000	.

*PRE-RECESSION *GINI Q2						
WHITE *PRE-RECESSION *GINI Q3					0.000	.
WHITE *PRE-RECESSION *GINI Q4					0.000	.
WHITE *PRE-RECESSION *GINI Q1					0.000	.
WHITE *PRE-RECESSION *GINI Q2					0.000	.
WHITE *PRE-RECESSION *GINI Q3					0.000	.
WHITE *PRE-RECESSION *GINI Q4					0.000	.

Note: Bolded type face indicates significant ≤ .05 (p-value)

Table E.1C. Factors associated with self reported health status among working age adults, 2004 – 2010 BRFSS: Medicaid Generosity of Parents of Dependent Children

	Model 4: Coef(SE)		Model 5:		Model 6	
Intercept	**-4.411**	0.081	**-4.409**	0.082	**-4.407**	0.082
Fixed Effects						
Race						
Other	**0.632**	0.017	**0.687**	0.023	**0.684**	0.028
AIAN	**0.350**	0.024	**0.409**	0.039	**0.452**	0.055
Asian	**0.313**	0.035	**0.431**	0.041	**0.410**	0.046
Black	**0.261**	0.013	**0.328**	0.020	**0.303**	0.027
White (ref.)	0.000	.	0.000	.	0.000	.
Time Period						
Recovery	**-0.039**	0.012	**-0.065**	0.017	**-0.066**	0.018
Recession	-0.001	0.008	-0.010	0.013	-0.017	0.014
Pre-Recession (ref.)	0.000	.	0.000	.	0.000	.
Time-Period*Race						
Recession*Other	**-0.105**	0.036	**-0.114**	0.037	**-0.140**	0.051
Recovery*Other	**-0.063**	0.026	**-0.064**	0.026	-0.043	0.042
Pre-Recession*Other	0.000	.	0.000	.	0.000	.
Recession*AIAN	0.061	0.043	0.045	0.044	-0.022	0.078
Recovery*AIAN	-0.047	0.036	-0.050	0.036	-0.116	0.080
Pre-Recession*AIAN	0.000	.	0.000	.	0.000	.
Recession*Asian	-0.027	0.060	-0.048	0.060	0.002	0.071
Recovery*Asian	-0.028	0.050	-0.046	0.050	-0.019	0.062
Pre-Recession*Asian	0.000	.	0.000	.	0.000	.
Recession*Black	**0.057**	0.023	0.044	0.023	0.060	0.041
Recovery*Black	0.013	0.019	0.008	0.019	0.064	0.037
Pre-Recession*Black	0.000	.	0.000	.	0.000	.
Recession*White	0.000	.	0.000	.	0.000	.
Recovery*White	0.000	.	0.000	.	0.000	.
Pre-Recession*White	0.000	.	0.000	.	0.000	.
Predisposing and Enabling Characteristics						
Sex						
Male	**0.058**	0.006	**0.058**	0.006	0.058	0.006
Female	0.000	.	0.000	.	0.000	.
Age	**0.019**	0.000	**0.019**	0.000	**0.019**	0.000
Income						
Missing/Don't Know	**0.614**	0.010	**0.613**	0.010	**0.613**	0.010
< $15,000	**1.276**	0.010	**1.276**	0.010	**1.276**	0.010
$15 – 25,000	**0.974**	0.009	**0.973**	0.009	**0.973**	0.009

$25 – 35,000	**0.651**	0.010	**0.650**	0.010	**0.650**	0.010
$35 – 50,000	**0.396**	0.009	**0.396**	0.009	**0.396**	0.009
>$50,000 (ref.)	0.000	.	0.000	.	0.000	.
Education						
Some High School	**1.368**	0.010	**1.367**	0.010	**1.367**	0.010
High School Graduate	**0.713**	0.008	**0.712**	0.008	**0.712**	0.008
Some College	**0.412**	0.008	**0.411**	0.008	**0.411**	0.008
College Graduate (ref.)	0.000	.	0.000	.	0.000	.
Insurance						
Not Insured	**0.194**	0.007	**0.194**	0.007	**0.194**	0.007
Insured (ref.)	0.000	.	0.000	.	0.000	.
Employment						
Unemployed	**0.292**	0.010	**0.291**	0.010	**0.291**	0.010
Neither Employed or Unemployed	**0.568**	0.006	**0.568**	0.006	**0.567**	0.006
Employed (ref.)	0.000	.	0.000	.	0.000	.
Rurality						
Non-Metro	**0.043**	0.007	**0.043**	0.007	**0.043**	0.007
MISSING	**0.077**	0.009	**0.077**	0.009	**0.076**	0.009
Metro	0.000	.	0.000	.	0.000	.
Need characteristics						
Disability						
Disabled	**1.935**	0.006	**1.935**	0.006	**1.934**	0.006
Not Disabled	0.000	.	0.000	.	0.000	.
Diabetes						
Diabetes	**1.317**	0.008	**1.317**	0.008	**1.317**	0.008
No Diabetes	0.000	.	0.000	.	0.000	.
Random Effects:						
State (Intercept)	0.012	0.003	0.013	0.003	0.013	0.003
Medicaid Generosity for Parents						
Medicaid Generosity <100% FPL	0.015	0.014	0.021	0.017	0.017	0.017
Medicaid Generosity ≥100% FPL	0.000	.	0.000	.	0.000	.
Poverty Rate	**1.961**	0.415	**1.918**	0.420	**1.918**	0.420
Unemployment Rate	0.004	0.002	**0.004**	0.002	**0.005**	0.002

Time-Period*Medicaid Generosity						
RECOVERY*Eligibility <100% FPL			**0.041**	0.017	**0.041**	0.019
RECOVERY*Eligibility ≥100% FPL			0.000	.	0.000	.
RECESSION*Eligibility <100% FPL			0.011	0.014	0.021	0.016
RECESSION*Eligibility ≥100% FPL			0.000	.	0.000	.
PRE-RECESSION*Eligibility <100% FPL			0.000	.	0.000	.
PRE-RECESSION*Eligibility ≥100% FPL			0.000	.	0.000	.
Race*Medicaid Generosity						
OTHER *Eligibility <100% FPL			**-0.081**	0.025	**-0.078**	0.035
OTHER* Eligibility ≥100% FPL			0.000	.	0.000	.
AIAN * Eligibility <100% FPL			-0.073	0.038	**-0.125**	0.061
AIAN* Eligibility ≥100% FPL			0.000	.	0.000	.
ASIAN * Eligibility <100% FPL			**-0.271**	0.050	**-0.217**	0.072
ASIAN* Eligibility ≥100% FPL			0.000	.	0.000	.
BLACK * Eligibility <100% FPL			**-0.088**	0.020	-0.055	0.031
BLACK* Eligibility ≥100% FPL			0.000	.	0.000	.
WHITE * Eligibility <100% FPL			0.000	.	0.000	.
WHITE* Eligibility ≥100% FPL			0.000	.	0.000	.
Race*Time-Period*Medicaid Generosity						
OTHER*RECOVERY*Eligibility <100% FPL					0.064	0.074
OTHER*RECOVERY* Eligibility ≥100% FPL					0.000	.
OTHER*RECESSION*Eligibility <100% FPL					-0.034	0.053

OTHER*RECESSION* Eligibility ≥100% FPL					0.000	.
OTHER*PRE-RECESSION*Eligibility <100% FPL					0.000	.
OTHER*PRE-RECESSION* Eligibility ≥100% FPL					0.000	.
AIAN*RECOVERY*Eligibility <100% FPL					0.093	0.096
AIAN*RECOVERY* Eligibility ≥100% FPL					0.000	.
AIAN*RECESSION*Eligibilit y <100% FPL					0.080	0.089
AIAN*RECESSION* Eligibility ≥100% FPL					0.000	.
AIAN*PRE-RECESSION*Eligibility <100% FPL					0.000	.
AIAN*PRE-RECESSION* Eligibility ≥100% FPL					0.000	.
ASIAN*RECOVERY*Eligibili ty <100% FPL					-0.180	0.135
ASIAN*RECOVERY* Eligibility ≥100% FPL					0.000	.
ASIAN*RECESSION*Eligibili ty <100% FPL					-0.062	0.107
ASIAN*RECESSION* Eligibility ≥100% FPL					0.000	.
ASIAN*PRE-RECESSION*Eligibility <100% FPL					0.000	.
ASIAN*PRE-RECESSION* Eligibility ≥100% FPL					0.000	.
BLACK*RECOVERY*Eligibil ity <100% FPL					-0.020	0.050
BLACK*RECOVERY* Eligibility ≥100% FPL					0.000	.
BLACK*RECESSION*Eligibil ity <100% FPL					-0.076	0.043
BLACK*RECESSION* Eligibility ≥100% FPL					0.000	.
BLACK*PRE-RECESSION*Eligibility <100% FPL					0.000	.
BLACK*PRE-RECESSION* Eligibility ≥100% FPL					0.000	.

WHITE*RECOVERY*Eligibility <100% FPL					0.000	.
WHITE*RECOVERY* Eligibility ≥100% FPL					0.000	.
WHITE*RECESSION*Eligibility <100% FPL					0.000	.
WHITE*RECESSION* Eligibility ≥100% FPL					0.000	.
WHITE*PRE-RECESSION*Eligibility <100% FPL					0.000	.
WHITE*PRE-RECESSION* Eligibility ≥100% FPL					0.000	.

Note: Bolded type face indicates significant ≤ .05 (p-value)

Table E.1D. Factors associated with self reported health status among working age adults, 2004 – 2010 BRFSS: Medicaid Generosity for Childless adults

	Model 4: Coef(SE)		Model 5:		Model 6	
Intercept	**-4.396**	0.080	**-4.391**	0.081	**-4.387**	0.081
Fixed Effects						
Race						
Other	**0.612**	0.014	**0.549**	0.035	**0.532**	0.047
AIAN	**0.355**	0.020	**0.247**	0.038	**0.244**	0.048
Asian	**0.314**	0.029	0.095	0.110	0.045	0.163
Black	**0.254**	0.011	**0.335**	0.040	**0.174**	0.075
White (ref.)	0.000	.	0.000	.	0.000	.
Time Period						
Recovery	**-0.045**	0.012	-0.035	0.024	**-0.055**	0.026
Recession	-0.008	0.008	-0.020	0.019	-0.025	0.021
Pre-Recession (ref.)	0.000	.	0.000	.	0.000	.
Time-Period*Race						
Recession*Other	**-0.084**	0.035	**-0.078**	0.036	0.064	0.091
Recovery*Other	-0.043	0.024	-0.038	0.024	-0.061	0.073
Pre-Recession*Other	0.000	.	0.000	.	0.000	.
Recession*AIAN	0.055	0.041	0.056	0.041	0.115	0.095
Recovery*AIAN	-0.051	0.033	-0.049	0.033	-0.082	0.078
Pre-Recession*AIAN	0.000	.	0.000	.	0.000	.
Recession*Asian	-0.024	0.056	-0.016	0.057	0.080	0.293
Recovery*Asian	-0.027	0.046	-0.016	0.047	0.069	0.240
Pre-Recession*Asian	0.000	.	0.000	.	0.000	.
Recession*Black	**0.064**	0.022	**0.060**	0.022	**0.280**	0.100
Recovery*Black	0.018	0.018	0.014	0.018	**0.236**	0.094
Pre-Recession*Black	0.000	.	0.000	.	0.000	.
Recession*White	0.000	.	0.000	.	0.000	.
Recovery*White	0.000	.	0.000	.	0.000	.
Pre-Recession*White	0.000	.	0.000	.	0.000	.
Predisposing and Enabling Characteristics						
Sex						
Male	**0.061**	0.005	**0.061**	0.005	**0.061**	0.005
Female	0.000	.	0.000	.	0.000	.
Age	**0.018**	0.000	**0.018**	0.000	0.018	0.000
Income						
Missing/Don't Know	**0.622**	0.009	**0.622**	0.009	**0.622**	0.009
< $15,000	**1.278**	0.009	**1.278**	0.009	**1.278**	0.009
$15 – 25,000	**0.978**	0.008	**0.978**	0.008	**0.978**	0.008
$25 – 35,000	**0.650**	0.009	**0.650**	0.009	**0.650**	0.009

$35 – 50,000	**0.398**	0.008	**0.398**	0.008	**0.398**	0.008
>$50,000 (ref.)	0.000	.	0.000	.	0.000	.
Education						
Some High School	**1.360**	0.009	**1.358**	0.009	**1.358**	0.009
High School Graduate	**0.705**	0.007	**0.704**	0.007	**0.704**	0.007
Some College	**0.410**	0.007	**0.409**	0.007	**0.409**	0.007
College Graduate (ref.)	0.000	.	0.000	.	0.000	.
Insurance						
Not Insured	**0.192**	0.007	**0.192**	0.007	**0.192**	0.007
Insured (ref.)	0.000	.	0.000	.	0.000	.
Employment						
Unemployed	**0.294**	0.009	**0.294**	0.009	**0.294**	0.009
Neither Employed or Unemployed	**0.560**	0.006	**0.560**	0.006	**0.560**	0.006
Employed (ref.)	0.000	.	0.000	.	0.000	.
Rurality						
Non-Metro	**0.043**	0.006	**0.044**	0.006	**0.044**	0.006
MISSING	**0.074**	0.008	**0.074**	0.008	**0.074**	0.008
Metro	0.000	.	0.000	.	0.000	.
Need characteristics						
Disability						
Disabled	**1.938**	0.005	**1.938**	0.005	**1.938**	0.005
Not Disabled	0.000	.	0.000	.	0.000	.
Diabetes						
Diabetes	**1.316**	0.007	**1.316**	0.007	**1.316**	0.007
No Diabetes	0.000	.	0.000	.	0.000	.
Random Effects:						
State (Intercept)	0.012	0.002	0.012	0.002	0.012	0.002
Medicaid Generosity for Parents						
No Coverage for Childless Adults	0.037	0.020	0.035	0.024	0.031	0.025
Medicaid Generosity of Childless Adults Eligibility <133%FPL	-0.032	0.048	-0.040	0.051	-0.042	0.051
Medicaid Generosity of Childless Adults Eligibility ≥133%FPL	0.000	.	0.000	.	0.000	.
Poverty Rate	**1.951**	0.402	**1.935**	0.405	**1.933**	0.405
Unemployment Rate	0.002	0.002	0.002	0.002	0.002	0.002

Time-Period*Medicaid Generosity						
RECOVERY*No Coverage			-0.013	0.024	0.010	0.027
RECOVERY* Eligibility <133%FPL			-0.007	0.032	0.013	0.036
RECOVERY*Eligibility ≥133%FPL			0.000	.	0.000	.
RECESSION*NO COVERAGE			0.016	0.020	0.022	0.022
RECESSION* Eligibility <133%FPL			-0.007	0.026	-0.009	0.029
RECESSION*Eligibility ≥133%FPL			0.000	.	0.000	.
PRE-RECESSION*NO COVERAGE			0.000	.	0.000	.
PRE-RECESSION* Eligibility <133%FPL			0.000	.	0.000	.
PRE-RECESSION*Eligibility ≥133%FPL			0.000	.	0.000	.
RACE*MEDICAID GENEROSITY						
OTHER * NO COVERAGE L			**0.079**	0.036	**0.106**	0.050
OTHER* Eligibility <133%FPL			0.042	0.044	0.021	0.059
OTHER*Eligibility ≥133%FPL			0.000	.	0.000	.
AIAN * NO COVERAGE			**0.133**	0.039	**0.129**	0.053
AIAN* Eligibility <133%FPL			0.109	0.062	0.162	0.083
AIAN*Eligibility ≥133%FPL			0.000	.	0.000	.
ASIAN * NO COVERAGE			0.101	0.111	0.130	0.167
ASIAN* Eligibility <133%FPL			**0.434**	0.114	**0.511**	0.169
ASIAN*Eligibility ≥133%FPL			0.000	.	0.000	.
BLACK * NO COVERAGE			**-0.083**	0.039	0.084	0.075
BLACK* Eligibility <133%FPL			-0.081	0.048	0.073	0.084
BLACK*Eligibility ≥133%FPL			0.000	.	0.000	.
WHITE * NO COVERAGE			0.000	.	0.000	.
WHITE*			0.000	.	0.000	.

Eligibility <133%FPL						
WHITE*Eligibility ≥133%FPL			0.000	.	0.000	.
RACE*TIME-PERIOD*GENEROSITY						
OTHER*RECOVERY*NO COVERAGE					-0.181	0.101
OTHER*RECOVERY* Eligibility <133%FPL					-0.109	0.128
OTHER*RECOVERY* Eligibility ≥133%FPL					0.000	.
OTHER*RECESSION* NO COVERAGE					0.002	0.078
OTHER*RECESSION* Eligibility <133%FPL					0.151	0.096
OTHER*RECESSION* Eligibility ≥133%FPL					0.000	.
OTHER*PRE-RECESSION*NO COVERAGE					0.000	.
OTHER*PRE-RECESSION* Eligibility <133%FPL					0.000	.
OTHER*PRE-RECESSION* Eligibility ≥133%FPL					0.000	.
AIAN*RECOVERY*NO COVERAGE					-0.060	0.107
AIAN*RECOVERY* Eligibility <133%FPL					-0.173	0.174
AIAN*RECOVERY* Eligibility ≥133%FPL					0.000	.
AIAN*RECESSION* NO COVERAGE					0.055	0.087
AIAN*RECESSION* Eligibility <133%FPL					-0.081	0.141
AIAN*RECESSION* Eligibility ≥133%FPL					0.000	.
AIAN*PRE-RECESSION*NO COVERAGE					0.000	.
AIAN*PRE-RECESSION* Eligibility <133%FPL					0.000	.
AIAN*PRE-RECESSION* Eligibility ≥133%FPL					0.000	.
ASIAN*RECOVERY*NO COVERAGE					-0.020	0.302
ASIAN*RECOVERY* Eligibility <133%FPL					-0.203	0.306

ASIAN*RECOVERY* Eligibility ≥133%FPL					0.000	.
ASIAN*RECESSION* NO COVERAGE					-0.064	0.249
ASIAN*RECESSION* Eligibility <133%FPL					-0.110	0.250
ASIAN*RECESSION* Eligibility ≥133%FPL					0.000	.
ASIAN*PRE-RECESSION*NO COVERAGE					0.000	.
ASIAN*PRE-RECESSION* Eligibility <133%FPL					0.000	.
ASIAN*PRE-RECESSION* Eligibility ≥133%FPL					0.000	.
BLACK*RECOVERY*NO COVERAGE					**-0.235**	0.103
BLACK*RECOVERY* Eligibility <133%FPL					-0.166	0.125
BLACK*RECOVERY* Eligibility ≥133%FPL					0.000	.
BLACK*RECESSION* NO COVERAGE					**-0.229**	0.096
BLACK*RECESSION* Eligibility <133%FPL					-0.227	0.113
BLACK*RECESSION* Eligibility ≥133%FPL					0.000	.
BLACK*PRE-RECESSION*NO COVERAGE					0.000	.
BLACK*PRE-RECESSION* Eligibility <133%FPL					0.000	.
BLACK*PRE-RECESSION* Eligibility ≥133%FPL					0.000	.
WHITE*RECOVERY*NO COVERAGE					0.000	.
WHITE*RECOVERY* Eligibility <133%FPL					0.000	.
WHITE*RECOVERY* Eligibility ≥133%FPL					0.000	.
WHITE*RECESSION* NO COVERAGE					0.000	.
WHITE*RECESSION* Eligibility <133%FPL					0.000	.
WHITE*RECESSION* Eligibility ≥133%FPL					0.000	.
WHITE*PRE-RECESSION*NO COVERAGE					0.000	.

WHITE*PRE-RECESSION* Eligibility <133%FPL					0.000	.
WHITE*PRE-RECESSION* Eligibility ≥133%FPL					0.000	.

Note: Bolded type face indicates significant ≤ .05 (p-value)

Forgone Medical Care

Table E.2A. Factors associated with self reported forgone medical care among working age adults, 2004 – 2010 BRFSS

	Model 1: **Coef(SE)**		Model 2:		**Model 3**	
Intercept	**-2.158**	0.038	**-3.091**	0.027	**-3.238**	0.027
Fixed Effects						
Race						
Other	**0.862**	0.011	**-0.030**	0.013	**0.044**	0.013
AIAN	**0.738**	0.016	**0.060**	0.019	**0.038**	0.019
Asian	-0.029	0.024	**-0.136**	0.028	-0.023	0.028
Black	**0.625**	0.008	-0.018	0.010	**0.029**	0.010
White (ref.)	0.000	.	0.000	.	0.000	.
Time Period						
Recovery	**-0.040**	0.006	**0.093**	0.008	**0.078**	0.008
Recession	**-0.052**	0.005	**0.089**	0.006	**0.080**	0.006
Pre-Recession (ref.)	0.000	.	0.000	.	0.000	.
Time-Period*Race						
Recession*Other	0.033	0.027	**0.150**	0.032	**0.140**	0.033
Recovery*Other	**0.105**	0.018	**0.135**	0.022	**0.123**	0.022
Pre-Recession*Other	0.000	.	0.000	.	0.000	.
Recession*AIAN	0.058	0.032	-0.014	0.039	-0.010	0.040
Recovery*AIAN	**0.062**	0.026	-0.032	0.031	-0.035	0.032
Pre-Recession*AIAN	0.000	.	0.000	.	0.000	.
Recession*Asian	**0.126**	0.045	0.088	0.052	0.090	0.053
Recovery*Asian	0.045	0.038	0.050	0.044	0.046	0.044
Pre-Recession*Asian	0.000	.	0.000	.	0.000	.
Recession*Black	**0.088**	0.016	**0.070**	0.020	**0.080**	0.020
Recovery*Black	**0.109**	0.013	**0.091**	0.016	**0.089**	0.016
Pre-Recession*Black	0.000	.	0.000	.	0.000	.
Recession*White	0.000	.	0.000	.	0.000	.
Recovery*White	0.000	.	0.000	.	0.000	.
Pre-Recession*White	0.000	.	0.000	.	0.000	.
Predisposing and Enabling Characteristics						
Sex						
Male			**-0.441**	0.005	**-0.485**	0.005
Female			0.000	.	0.000	.
Age			**-0.007**	0.000	**-0.014**	0.000

Income						
Missing/Don't Know			**0.743**	0.009	**0.677**	0.009
< $15,000			**1.654**	0.009	**1.408**	0.009
$15 – 25,000			**1.510**	0.008	**1.381**	0.008
$25 – 35,000			**1.167**	0.008	**1.101**	0.008
$35 – 50,000			**0.809**	0.008	**0.768**	0.008
>$50,000 (ref.)			0.000	.	0.000	.
Education						
Some High School			**0.308**	0.009	**0.295**	0.009
High School Graduate			**0.141**	0.007	**0.134**	0.007
Some College			**0.263**	0.006	**0.225**	0.007
College Graduate (ref.)			0.000	.	0.000	.
Insurance						
Not Insured			**1.561**	0.005	**1.673**	0.005
Insured (ref.)			0.000	.	0.000	.
Employment						
Unemployed			**0.393**	0.008	**0.272**	0.008
Neither Employed or Unemployed			**0.039**	0.005	**-0.226**	0.006
Employed (ref.)			0.000	.	0.000	.
Rurality						
Non-Metro			0.003	0.006	0.006	0.006
MISSING			**-0.045**	0.008	**-0.031**	0.008
Metro			0.000	.	0.000	.
Need characteristics						
Disability						
Disabled					**0.996**	0.006
Not Disabled					0.000	.
Diabetes						
Diabetes					**0.157**	0.008
No Diabetes					0.000	.
Random Effects:						
State (Intercept)	0.074	0.015	0.036	0.007	0.034	0.007

Note: Bolded type face indicates significant ≤ .05 (p-value)

Table E.2B. Factors associated with self reported forgone medical care among working age adults, 2004 – 2010 BRFSS

	Model 4: **Coef(SE)**		Model 5:		**Model 6**	
Intercept	**-3.708**	0.111	**-3.726**	0.108	**-3.727**	0.108
Fixed Effects						
Race						
Other	**0.039**	0.013	0.024	0.024	0.023	0.028
AIAN	0.032	0.019	-0.001	0.029	0.036	0.034
Asian	-0.023	0.028	**-0.208**	0.040	**-0.203**	0.047
Black	**0.033**	0.010	**0.101**	0.026	**0.115**	0.033
White (ref.)	0.000	.	0.000	.	0.000	.
Time Period						
Recovery	0.015	0.011	-0.003	0.016	0.000	0.016
Recession	**0.045**	0.008	**0.056**	0.012	**0.061**	0.012
Pre-Recession (ref.)	0.000	.	0.000	.	0.000	.
Time-Period*Race						
Recession*Other	**0.136**	0.034	**0.141**	0.034	**0.140**	0.064
Recovery*Other	**0.122**	0.023	**0.127**	0.023	**0.131**	0.048
Pre-Recession*Other	0.000	.	0.000	.	0.000	.
Recession*AIAN	0.004	0.040	-0.003	0.040	-0.103	0.075
Recovery*AIAN	-0.026	0.032	-0.017	0.032	-0.092	0.058
Pre-Recession*AIAN	0.000	.	0.000	.	0.000	.
Recession*Asian	0.089	0.053	0.081	0.053	0.089	0.091
Recovery*Asian	0.041	0.044	0.035	0.045	0.016	0.073
Pre-Recession*Asian	0.000	.	0.000	.	0.000	.
Recession*Black	**0.072**	0.020	**0.069**	0.021	0.073	0.065
Recovery*Black	**0.081**	0.016	**0.092**	0.017	0.041	0.054
Pre-Recession*Black	0.000	.	0.000	.	0.000	.
Recession*White	0.000	.	0.000	.	0.000	.
Recovery*White	0.000	.	0.000	.	0.000	.
Pre-Recession*White	0.000	.	0.000	.	0.000	.
Predisposing and Enabling Characteristics						
Sex						
Male	**-0.486**	0.005	**-0.487**	0.005	**-0.487**	0.005
Female	0.000	.	0.000	.	0.000	.
Age	**-0.014**	0.000	**-0.015**	0.000	**-0.014**	0.000
Income						
Missing/Don't Know	**0.672**	0.009	**0.672**	0.009	**0.672**	0.009
< $15,000	**1.402**	0.009	**1.403**	0.009	**1.403**	0.009
$15 – 25,000	**1.382**	0.008	**1.382**	0.008	**1.382**	0.008

$25 – 35,000	**1.102**	0.008	**1.102**	0.008	**1.102**	0.008
$35 – 50,000	**0.768**	0.008	**0.768**	0.008	**0.768**	0.008
>$50,000 (ref.)	0.000	.	0.000	.	0.000	.
Education						
Some High School	**0.294**	0.009	**0.295**	0.009	**0.295**	0.009
High School Graduate	**0.132**	0.007	**0.134**	0.007	**0.134**	0.007
Some College	**0.225**	0.007	**0.226**	0.007	**0.226**	0.007
College Graduate (ref.)	0.000	.	0.000	.	0.000	.
Insurance						
Not Insured	**1.677**	0.005	**1.678**	0.005	**1.678**	0.005
Insured (ref.)	0.000	.	0.000	.	0.000	.
Employment						
Unemployed	**0.272**	0.008	**0.273**	0.008	**0.273**	0.008
Neither Employed or Unemployed	**-0.228**	0.006	**-0.228**	0.006	**-0.228**	0.006
Employed (ref.)	0.000	.	0.000	.	0.000	.
Rurality						
Non-Metro	0.006	0.006	0.007	0.006	0.007	0.006
MISSING	**-0.030**	0.008	**-0.027**	0.008	**-0.027**	0.008
Metro	0.000	.	0.000	.	0.000	.
Need characteristics						
Disability						
Disabled	**0.998**	0.006	**0.997**	0.006	**0.998**	0.006
Not Disabled	0.000	.	0.000	.	0.000	.
Diabetes						
Diabetes	**0.155**	0.008	**0.156**	0.008	**0.156**	0.008
No Diabetes	0.000	.	0.000	.	0.000	.
Random Effects:						
State (Intercept)	0.022	0.004	0.021	0.004	0.021	0.004
GINI Q1	0.007	0.065	0.003	0.064	0.010	0.065
GINI Q2	0.086	0.061	0.081	0.059	0.086	0.060
GINI Q3	-0.038	0.058	-0.047	0.057	-0.036	0.057
GINI Q4	0.000	.	0.000	.	0.000	.
Poverty Rate	**2.048**	0.617	**2.159**	0.598	**2.157**	0.598
Unemployment Rate	**0.015**	0.002	**0.015**	0.002	**0.015**	0.002
RACE*GINI						

OTHER*GINI Q1			**0.064**	0.029	0.070	0.037
OTHER*GINI Q2			-0.040	0.031	-0.043	0.040
OTHER*GINI Q3			0.002	0.030	0.000	0.040
OTHER*GINI Q4			0.000	.	0.000	.
AIAN*GINI Q1			**0.346**	0.047	**0.326**	0.062
AIAN*GINI Q2			**0.095**	0.038	0.018	0.051
AIAN*GINI Q3			**-0.119**	0.037	**-0.165**	0.049
AIAN*GINI Q4			0.000	.	0.000	.
ASIAN*GINI Q1			**0.287**	0.055	**0.275**	0.075
ASIAN*GINI Q2			**0.269**	0.052	**0.224**	0.073
ASIAN*GINI Q3			**0.332**	0.063	**0.396**	0.085
ASIAN*GINI Q4			0.000	.	0.000	.
BLACK*GINI Q1			**-0.092**	0.028	**-0.102**	0.037
BLACK*GINI Q2			**-0.080**	0.028	**-0.101**	0.038
BLACK*GINI Q3			-0.024	0.031	-0.045	0.042
BLACK*GINI Q4			0.000	.	0.000	.
WHITE*GINI Q1			0.000	.	0.000	.
WHITE*GINI Q2			0.000	.	0.000	.
WHITE*GINI Q3			0.000	.	0.000	.
WHITE*GINI Q4			0.000	.	0.000	.
TIME*GINI						
RECOVERY*GINI Q1			0.029	0.019	0.031	0.021
RECOVERY*GINI Q2			0.010	0.019	0.000	0.021
RECOVERY*GINI Q3			**0.040**	0.020	0.036	0.022
RECOVERY*GINI Q4			0.000	.	0.000	.
RECESSION*GINI Q1			**-0.046**	0.016	**-0.048**	0.018
RECESSION*GINI Q2			-0.008	0.015	-0.019	0.016
RECESSION*GINI Q3			0.004	0.015	-0.002	0.017
RECESSION*GINI Q4			0.000	.	0.000	.
PRE-RECESSION *GINI Q1			0.000	.	0.000	.
PRE-RECESSION *GINI Q2			0.000	.	0.000	.
PRE-RECESSION *GINI Q3			0.000	.	0.000	.
PRE-RECESSION *GINI Q4			0.000	.	0.000	.

RACE*TIME*GINI						
OTHER *PRE-RECESSION *GINI Q1					-0.056	0.098
OTHER* PRE-RECESSION* GINI Q2					0.037	0.095
OTHER *PRE-RECESSION *GINI Q3					0.014	0.092
OTHER *PRE-RECESSION *GINI Q4					0.000	.
OTHER *PRE-RECESSION *GINI Q1					-0.008	0.065
OTHER *PRE-RECESSION *GINI Q2					-0.007	0.069
OTHER *PRE-RECESSION *GINI Q3					0.000	0.067
OTHER *PRE-RECESSION *GINI Q4					0.000	.
OTHER *PRE-RECESSION *GINI Q1					0.000	.
OTHER *PRE-RECESSION *GINI Q2					0.000	.
OTHER *PRE-RECESSION *GINI Q3					0.000	.
OTHER *PRE-RECESSION *GINI Q4					0.000	.
AIAN *PRE-RECESSION *GINI Q1					0.008	0.127
AIAN * PRE-RECESSION* GINI Q2					**0.278**	0.109
AIAN *PRE-RECESSION					0.098	0.103

*GINI Q3						
AIAN *PRE-RECESSION *GINI Q4					0.000	.
AIAN *PRE-RECESSION *GINI Q1					0.080	0.110
AIAN *PRE-RECESSION *GINI Q2					0.121	0.086
AIAN *PRE-RECESSION *GINI Q3					0.105	0.080
AIAN *PRE-RECESSION *GINI Q4					0.000	.
AIAN *PRE-RECESSION *GINI Q1					0.000	.
AIAN *PRE-RECESSION *GINI Q2					0.000	.
AIAN *PRE-RECESSION *GINI Q3					0.000	.
AIAN *PRE-RECESSION *GINI Q4					0.000	.
ASIAN *PRE-RECESSION *GINI Q1					-0.019	0.143
ASIAN * PRE-RECESSION* GINI Q2					0.068	0.134
ASIAN *PRE-RECESSION *GINI Q3					-0.169	0.176
ASIAN *PRE-RECESSION *GINI Q4					0.000	.
ASIAN *PRE-RECESSION *GINI Q1					0.052	0.123
ASIAN *PRE-RECESSION					0.100	0.115

*GINI Q2						
ASIAN *PRE-RECESSION *GINI Q3					-0.166	0.143
ASIAN *PRE-RECESSION *GINI Q4					0.000	.
ASIAN *PRE-RECESSION *GINI Q1					0.000	.
ASIAN *PRE-RECESSION *GINI Q2					0.000	.
ASIAN *PRE-RECESSION *GINI Q3					0.000	.
ASIAN *PRE-RECESSION *GINI Q4					0.000	.
BLACK *PRE-RECESSION *GINI Q1					0.001	0.075
BLACK * PRE-RECESSION* GINI Q2					-0.018	0.077
BLACK *PRE-RECESSION *GINI Q3					0.019	0.086
BLACK *PRE-RECESSION *GINI Q4					0.000	.
BLACK *PRE-RECESSION *GINI Q1					0.021	0.063
BLACK *PRE-RECESSION *GINI Q2					0.052	0.063
BLACK *PRE-RECESSION *GINI Q3					0.037	0.069
BLACK *PRE-RECESSION *GINI Q4					0.000	.
BLACK *PRE-RECESSION					0.000	.

*GINI Q1						
BLACK *PRE-RECESSION *GINI Q2					0.000	.
BLACK *PRE-RECESSION *GINI Q3					0.000	.
BLACK *PRE-RECESSION *GINI Q4					0.000	.
WHITE *PRE-RECESSION *GINI Q1					0.000	.
WHITE * PRE-RECESSION* GINI Q2					0.000	.
WHITE *PRE-RECESSION *GINI Q3					0.000	.
WHITE *PRE-RECESSION *GINI Q4					0.000	.
WHITE *PRE-RECESSION *GINI Q1					0.000	.
WHITE *PRE-RECESSION *GINI Q2					0.000	.
WHITE *PRE-RECESSION *GINI Q3					0.000	.
WHITE *PRE-RECESSION *GINI Q4					0.000	.
WHITE *PRE-RECESSION *GINI Q1					0.000	.
WHITE *PRE-RECESSION *GINI Q2					0.000	.
WHITE *PRE-RECESSION *GINI Q3					0.000	.
WHITE *PRE-RECESSION					0.000	.

*GINI Q4						

Note: Bolded type face indicates significant ≤ .05 (p-value)

Table E.2C. Factors associated with self reported forgone medical care among working age adults, 2004 – 2010 BRFSS: Medicaid Generosity of Parents of Dependent Children

	Model 4: **Coef(SE)**		Model 5:		**Model 6**	
Intercept	**-3.756**	0.107	**-3.764**	0.108	**-3.766**	0.108
Fixed Effects						
Race						
Other	0.018	0.016	**0.130**	0.023	**0.150**	0.028
AIAN	0.024	0.022	**0.093**	0.038	**0.161**	0.054
Asian	0.000	0.033	-0.032	0.040	-0.058	0.047
Black	**0.034**	0.012	**0.040**	0.019	0.030	0.026
White (ref.)	0.000	.	0.000	.	0.000	.
Time Period						
Recovery	0.022	0.011	0.025	0.016	0.027	0.017
Recession	**0.055**	0.008	**0.062**	0.013	**0.063**	0.014
Pre-Recession (ref.)	0.000	.	0.000	.	0.000	.
Time-Period*Race						
Recession*Other	**0.155**	0.035	**0.119**	0.035	0.080	0.050
Recovery*Other	**0.144**	0.025	**0.136**	0.025	**0.100**	0.041
Pre-Recession*Other	0.000	.	0.000	.	0.000	.
Recession*AIAN	0.011	0.041	-0.010	0.043	**-0.163**	0.076
Recovery*AIAN	-0.020	0.034	-0.022	0.034	-0.070	0.078
Pre-Recession*AIAN	0.000	.	0.000	.	0.000	.
Recession*Asian	0.066	0.056	0.076	0.056	0.090	0.073
Recovery*Asian	0.019	0.048	0.024	0.048	0.084	0.064
Pre-Recession*Asian	0.000	.	0.000	.	0.000	.
Recession*Black	**0.070**	0.021	**0.069**	0.021	**0.100**	0.039
Recovery*Black	**0.081**	0.018	**0.082**	0.018	**0.084**	0.035
Pre-Recession*Black	0.000	.	0.000	.	0.000	.
Recession*White	0.000	.	0.000	.	0.000	.
Recovery*White	0.000	.	0.000	.	0.000	.
Pre-Recession*White	0.000	.	0.000	.	0.000	.
Predisposing and Enabling Characteristics						
Sex						
Male	**-0.489**	0.006	**-0.489**	0.006	**-0.489**	0.006
Female	0.000	.	0.000	.	0.000	.
Age	**-0.014**	0.000	**-0.014**	0.000	**-0.014**	0.000
Income						
Missing/Don't Know	**0.670**	0.010	**0.670**	0.010	**0.670**	0.010
< $15,000	**1.403**	0.010	**1.402**	0.010	**1.402**	0.010
$15 – 25,000	**1.385**	0.009	**1.384**	0.009	**1.384**	0.009

$25 – 35,000	**1.100**	0.009	**1.099**	0.009	**1.099**	0.009
$35 – 50,000	**0.766**	0.009	**0.766**	0.009	**0.766**	0.009
>$50,000 (ref.)	0.000	.	0.000	.	0.000	.
Education						
Some High School	**0.297**	0.010	**0.298**	0.010	**0.298**	0.010
High School Graduate	**0.133**	0.007	**0.133**	0.007	**0.133**	0.007
Some College	**0.225**	0.007	**0.224**	0.007	**0.225**	0.007
College Graduate (ref.)	0.000	.	0.000	.	0.000	.
Insurance						
Not Insured	**1.675**	0.006	**1.676**	0.006	**1.676**	0.006
Insured (ref.)	0.000	.	0.000	.	0.000	.
Employment						
Unemployed	**0.275**	0.009	**0.275**	0.009	**0.275**	0.009
Neither Employed or Unemployed	**-0.226**	0.006	**-0.226**	0.006	**-0.226**	0.006
Employed (ref.)	0.000	.	0.000	.	0.000	.
Rurality						
Non-Metro	0.006	0.007	0.006	0.007	0.027	0.017
MISSING	**-0.029**	0.009	**-0.029**	0.009	**0.063**	0.014
Metro	0.000	.	0.000	.	0.000	.
Need characteristics						
Disability						
Disabled	**1.000**	0.006	**1.000**	0.006	**1.000**	0.006
Not Disabled	0.000	.	0.000	.	0.000	.
Diabetes						
Diabetes	**0.152**	0.009	**0.152**	0.009	**0.152**	0.009
No Diabetes	0.000	.	0.000	.	0.000	.
Random Effects:						
State (Intercept)	0.022	0.005	0.023	0.005	0.023	0.005
Medicaid Generosity for Parents						
Medicaid Generosity <100% FPL	0.015	0.013	0.029	0.016	0.029	0.017
Medicaid Generosity ≥100% FPL	0.000	.	0.000	.	0.000	.
Poverty Rate	**2.144**	0.552	**2.132**	0.555	**2.137**	0.556
Unemployment Rate	**0.019**	0.002	**0.018**	0.002	**0.019**	0.002

Time-Period*Medicaid Generosity						
RECOVERY*Eligibility <100% FPL			-0.002	0.016	-0.006	0.018
RECOVERY*Eligibility ≥100% FPL			0.000	.	0.000	.
RECESSION*Eligibility <100% FPL			-0.009	0.013	-0.011	0.015
RECESSION*Eligibility ≥100% FPL			0.000	.	0.000	.
PRE-RECESSION*Eligibility <100% FPL			0.000	.	0.000	.
PRE-RECESSION*Eligibility ≥100% FPL			0.000	.	0.000	.
Race*Medicaid Generosity						
OTHER *Eligibility <100% FPL			**-0.165**	0.024	**-0.195**	0.034
OTHER* Eligibility ≥100% FPL			0.000	.	0.000	.
AIAN * Eligibility <100% FPL			**-0.084**	0.037	**-0.166**	0.059
AIAN* Eligibility ≥100% FPL			0.000	.	0.000	.
ASIAN * Eligibility <100% FPL			0.077	0.044	**0.133**	0.066
ASIAN* Eligibility ≥100% FPL			0.000	.	0.000	.
BLACK * Eligibility <100% FPL			-0.007	0.019	0.004	0.029
BLACK* Eligibility ≥100% FPL			0.000	.	0.000	.
WHITE * Eligibility <100% FPL			0.000	.	0.000	.
WHITE* Eligibility ≥100% FPL			0.000	.	0.000	.
Race*Time-Period*Medicaid Generosity						
OTHER*RECOVERY*Eligibility <100% FPL					0.072	0.071
OTHER*RECOVERY* Eligibility ≥100% FPL					0.000	.
OTHER*RECESSION*Eligibility <100% FPL					0.056	0.052

OTHER*RECESSION* Eligibility ≥100% FPL					0.000	.
OTHER*PRE-RECESSION*Eligibility <100% FPL					0.000	.
OTHER*PRE-RECESSION* Eligibility ≥100% FPL					0.000	.
AIAN*RECOVERY*Eligibility <100% FPL					**0.230**	0.092
AIAN*RECOVERY* Eligibility ≥100% FPL					0.000	.
AIAN*RECESSION*Eligibility <100% FPL					0.057	0.086
AIAN*RECESSION* Eligibility ≥100% FPL					0.000	.
AIAN*PRE-RECESSION*Eligibility <100% FPL					0.000	.
AIAN*PRE-RECESSION* Eligibility ≥100% FPL					0.000	.
ASIAN*RECOVERY*Eligibility <100% FPL					-0.021	0.116
ASIAN*RECOVERY* Eligibility ≥100% FPL					0.000	.
ASIAN*RECESSION*Eligibility <100% FPL					-0.142	0.097
ASIAN*RECESSION* Eligibility ≥100% FPL					0.000	.
ASIAN*PRE-RECESSION*Eligibility <100% FPL					0.000	.
ASIAN*PRE-RECESSION* Eligibility ≥100% FPL					0.000	.
BLACK*RECOVERY*Eligibility <100% FPL					-0.044	0.047
BLACK*RECOVERY* Eligibility ≥100% FPL					0.000	.
BLACK*RECESSION*Eligibility <100% FPL					-0.003	0.041
BLACK*RECESSION* Eligibility ≥100% FPL					0.000	.
BLACK*PRE-RECESSION*Eligibility <100% FPL					0.000	.
BLACK*PRE-RECESSION* Eligibility ≥100% FPL					0.000	.

WHITE*RECOVERY*Eligibility <100% FPL					0.000	.
WHITE*RECOVERY* Eligibility ≥100% FPL					0.000	.
WHITE*RECESSION*Eligibility <100% FPL					0.000	.
WHITE*RECESSION* Eligibility ≥100% FPL					0.000	.
WHITE*PRE-RECESSION*Eligibility <100% FPL					0.000	.
WHITE*PRE-RECESSION* Eligibility ≥100% FPL					0.000	.

Note: Bolded type face indicates significant ≤ .05 (p-value)

Table E.2D. Factors associated with self reported forgone medical care among working age adults, 2004 – 2010 BRFSS: Medicaid Generosity for Childless adults

	Model 4: **Coef(SE)**		Model 5:		**Model 6**	
Intercept	**-3.728**	0.107	**-3.744**	0.107	**-3.742**	0.107
Fixed Effects						
Race						
Other	**0.039**	0.013	-0.056	0.033	-0.079	0.045
AIAN	0.032	0.019	**-0.225**	0.036	**-0.240**	0.045
Asian	-0.022	0.028	-0.111	0.092	-0.063	0.135
Black	**0.033**	0.010	**0.113**	0.037	**0.142**	0.065
White (ref.)	0.000	.	0.000	.	0.000	.
Time Period						
Recovery	0.015	0.011	0.005	0.022	0.004	0.024
Recession	**0.045**	0.008	**0.071**	0.018	**0.067**	0.019
Pre-Recession (ref.)	0.000	.	0.000	.	0.000	.
Time-Period*Race						
Recession*Other	**0.136**	0.034	**0.140**	0.034	0.130	0.087
Recovery*Other	**0.122**	0.023	**0.125**	0.023	**0.194**	0.068
Pre-Recession*Other	0.000	.	0.000	.	0.000	.
Recession*AIAN	0.004	0.040	0.008	0.040	0.072	0.092
Recovery*AIAN	-0.026	0.032	-0.025	0.032	-0.009	0.074
Pre-Recession*AIAN	0.000	.	0.000	.	0.000	.
Recession*Asian	0.089	0.053	0.079	0.053	-0.007	0.242
Recovery*Asian	0.041	0.044	0.045	0.045	-0.038	0.201
Pre-Recession*Asian	0.000	.	0.000	.	0.000	.
Recession*Black	**0.072**	0.020	**0.067**	0.020	0.023	0.091
Recovery*Black	**0.081**	0.016	**0.080**	0.016	0.044	0.083
Pre-Recession*Black	0.000	.	0.000	.	0.000	.
Recession*White	0.000	.	0.000	.	0.000	.
Recovery*White	0.000	.	0.000	.	0.000	.
Pre-Recession*White	0.000	.	0.000	.	0.000	.
Predisposing and Enabling Characteristics						
Sex						
Male	**-0.486**	0.005	**-0.487**	0.005	**-0.487**	0.005
Female	0.000	.	0.000	.	0.000	.
Age	**-0.014**	0.000	**-0.014**	0.000	**-0.014**	0.000
Income						
Missing/Don't Know	**0.672**	0.009	**0.672**	0.009	**0.672**	0.009
< $15,000	**1.402**	0.009	**1.402**	0.009	**1.402**	0.009
$15 – 25,000	**1.382**	0.008	**1.382**	0.008	**1.382**	0.008
$25 – 35,000	**1.102**	0.008	**1.102**	0.008	**1.102**	0.008

$35 – 50,000	**0.768**	0.008	**0.768**	0.008	**0.769**	0.008
>$50,000 (ref.)	0.000	.	0.000	.	0.000	.
Education						
Some High School	**0.294**	0.009	**0.295**	0.009	**0.295**	0.009
High School Graduate	**0.132**	0.007	**0.133**	0.007	**0.133**	0.007
Some College	**0.225**	0.007	**0.225**	0.007	**0.225**	0.007
College Graduate (ref.)	0.000	.	0.000	.	0.000	.
Insurance						
Not Insured	**1.677**	0.005	**1.677**	0.005	**1.677**	0.005
Insured (ref.)	0.000	.	0.000	.	0.000	.
Employment						
Unemployed	**0.272**	0.008	**0.272**	0.008	**0.271**	0.008
Neither Employed or Unemployed	**-0.228**	0.006	**-0.228**	0.006	**-0.228**	0.006
Employed (ref.)	0.000	.	0.000	.	0.000	.
Rurality						
Non-Metro	0.006	0.006	0.007	0.006	0.007	0.006
MISSING	**-0.030**	0.008	**-0.031**	0.008	**-0.031**	0.008
Metro	0.000	.	0.000	.	0.000	.
Need characteristics						
Disability						
Disabled	**0.998**	0.006	**0.998**	0.006	**0.998**	0.006
Not Disabled	0.000	.	0.000	.	0.000	.
Diabetes						
Diabetes	**0.155**	0.008	**0.155**	0.008	**0.155**	0.008
No Diabetes	0.000	.	0.000	.	0.000	.
Random Effects:						
State (Intercept)	0.022	0.004	0.022	0.004	0.022	0.004
Medicaid Generosity for Parents						
No Coverage for Childless Adults	-0.004	0.020	-0.002	0.023	-0.005	0.024
Medicaid Generosity of Childless Adults Eligibility <133%FPL	**-0.137**	0.063	**-0.131**	0.065	**-0.128**	0.065
Medicaid Generosity of Childless Adults Eligibility ≥133%FPL	0.000	.	0.000	.	0.000	.
Poverty Rate	**2.334**	0.544	**2.406**	0.541	**2.405**	0.541
Unemployment Rate	**0.015**	0.002	**0.015**	0.002	**0.015**	0.002

Time-Period*Medicaid Generosity						
RECOVERY*No Coverage			0.009	0.023	0.011	0.025
RECOVERY* Eligibility <133%FPL			0.039	0.031	0.031	0.035
RECOVERY*Eligibility ≥133%FPL			0.000	.	0.000	.
RECESSION*NO COVERAGE			-0.029	0.019	-0.023	0.020
RECESSION* Eligibility <133%FPL			-0.033	0.025	-0.042	0.028
RECESSION*Eligibility ≥133%FPL			0.000	.	0.000	.
PRE-RECESSION*NO COVERAGE			0.000	.	0.000	.
PRE-RECESSION* Eligibility <133%FPL			0.000	.	0.000	.
PRE-RECESSION*Eligibility ≥133%FPL			0.000	.	0.000	.
RACE*MEDICAID GENEROSITY						
OTHER * NO COVERAGE L			**0.097**	0.033	**0.128**	0.047
OTHER* Eligibility <133%FPL			**0.128**	0.043	**0.119**	0.057
OTHER*Eligibility ≥133%FPL			0.000	.	0.000	.
AIAN * NO COVERAGE			**0.320**	0.037	**0.336**	0.050
AIAN* Eligibility <133%FPL			**0.284**	0.060	**0.328**	0.080
AIAN*Eligibility ≥133%FPL			0.000	.	0.000	.
ASIAN * NO COVERAGE			0.173	0.093	0.126	0.139
ASIAN* Eligibility <133%FPL			-0.109	0.099	-0.167	0.146
ASIAN*Eligibility ≥133%FPL			0.000	.	0.000	.
BLACK * NO COVERAGE			**-0.082**	0.036	-0.109	0.066
BLACK* Eligibility <133%FPL			-0.078	0.045	-0.133	0.075
BLACK*Eligibility ≥133%FPL			0.000	.	0.000	.
WHITE * NO COVERAGE			0.000	.	0.000	.
WHITE*			0.000	.	0.000	.

Eligibility <133%FPL						
WHITE*Eligibility ≥133%FPL			0.000	.	0.000	.
RACE*TIME-PERIOD*GENEROSITY						
OTHER*RECOVERY*NO COVERAGE					-0.002	0.096
OTHER*RECOVERY* Eligibility <133%FPL					0.102	0.124
OTHER*RECOVERY* Eligibility ≥133%FPL					0.000	.
OTHER*RECESSION* NO COVERAGE					-0.094	0.073
OTHER*RECESSION* Eligibility <133%FPL					0.007	0.092
OTHER*RECESSION* Eligibility ≥133%FPL					0.000	.
OTHER*PRE-RECESSION*NO COVERAGE					0.000	.
OTHER*PRE-RECESSION* Eligibility <133%FPL					0.000	.
OTHER*PRE-RECESSION* Eligibility ≥133%FPL					0.000	.
AIAN*RECOVERY*NO COVERAGE					-0.063	0.103
AIAN*RECOVERY* Eligibility <133%FPL					-0.240	0.171
AIAN*RECOVERY* Eligibility ≥133%FPL					0.000	.
AIAN*RECESSION* NO COVERAGE					-0.019	0.083
AIAN*RECESSION* Eligibility <133%FPL					-0.022	0.135
AIAN*RECESSION* Eligibility ≥133%FPL					0.000	.
AIAN*PRE-RECESSION*NO COVERAGE					0.000	.
AIAN*PRE-RECESSION* Eligibility <133%FPL					0.000	.
AIAN*PRE-RECESSION* Eligibility ≥133%FPL					0.000	.
ASIAN*RECOVERY*NO COVERAGE					0.096	0.250
ASIAN*RECOVERY* Eligibility <133%FPL					0.079	0.263

ASIAN*RECOVERY* Eligibility ≥133%FPL					0.000	.
ASIAN*RECESSION* NO COVERAGE					0.073	0.209
ASIAN*RECESSION* Eligibility <133%FPL					0.127	0.218
ASIAN*RECESSION* Eligibility ≥133%FPL					0.000	.
ASIAN*PRE-RECESSION*NO COVERAGE					0.000	.
ASIAN*PRE-RECESSION* Eligibility <133%FPL					0.000	.
ASIAN*PRE-RECESSION* Eligibility ≥133%FPL					0.000	.
BLACK*RECOVERY*NO COVERAGE					0.040	0.094
BLACK*RECOVERY* Eligibility <133%FPL					0.111	0.116
BLACK*RECOVERY* Eligibility ≥133%FPL					0.000	.
BLACK*RECESSION* NO COVERAGE					0.032	0.085
BLACK*RECESSION* Eligibility <133%FPL					0.084	0.102
BLACK*RECESSION* Eligibility ≥133%FPL					0.000	.
BLACK*PRE-RECESSION*NO COVERAGE					0.000	.
BLACK*PRE-RECESSION* Eligibility <133%FPL					0.000	.
BLACK*PRE-RECESSION* Eligibility ≥133%FPL					0.000	.
WHITE*RECOVERY*NO COVERAGE					0.000	.
WHITE*RECOVERY* Eligibility <133%FPL					0.000	.
WHITE*RECOVERY* Eligibility ≥133%FPL					0.000	.
WHITE*RECESSION* NO COVERAGE					0.000	.
WHITE*RECESSION* Eligibility <133%FPL					0.000	.
WHITE*RECESSION* Eligibility ≥133%FPL					0.000	.
WHITE*PRE-RECESSION*NO COVERAGE					0.000	.

WHITE*PRE-RECESSION* Eligibility <133%FPL					0.000	.
WHITE*PRE-RECESSION* Eligibility ≥133%FPL					0.000	.

Note: Bolded type face indicates significant ≤ .05 (p-value)

Poor Mental Health Days

Table E.3A. Factors associated with reporting one or more poor mental health days among working age adults, 2004 – 2010 BRFSS

	Model 1: **Coef(SE)**		Model 2:		**Model 3**	
Intercept	**-0.774**	0.018	**-0.608**	0.019	**-0.708**	0.018
Fixed Effects						
Race						
Other	**0.038**	0.009	**-0.391**	0.011	**-0.336**	0.011
AIAN	**0.377**	0.013	**0.049**	0.015	0.019	0.015
Asian	**-0.241**	0.016	**-0.436**	0.017	**-0.356**	0.017
Black	**0.141**	0.007	**-0.233**	0.008	**-0.206**	0.008
White (ref.)	0.000	.	0.000	.	0.000	.
Time Period						
Recovery	**-0.045**	0.004	**0.022**	0.005	0.001	0.005
Recession	**-0.049**	0.003	**0.014**	0.004	0.003	0.004
Pre-Recession (ref.)	0.000	.	0.000	.	0.000	.
Time-Period*Race						
Recession*Other	-0.010	0.023	0.024	0.026	0.009	0.027
Recovery*Other	**0.065**	0.016	**0.065**	0.018	**0.047**	0.018
Pre-Recession*Other	0.000	.	0.000	.	0.000	.
Recession*AIAN	**0.062**	0.027	0.046	0.031	0.044	0.032
Recovery*AIAN	**0.069**	0.022	0.036	0.025	0.029	0.025
Pre-Recession*AIAN	0.000	.	0.000	.	0.000	.
Recession*Asian	**-0.088**	0.030	**-0.079**	0.034	**-0.071**	0.034
Recovery*Asian	**-0.063**	0.024	**-0.071**	0.027	**-0.067**	0.028
Pre-Recession*Asian	0.000	.	0.000	.	0.000	.
Recession*Black	**0.030**	0.013	0.019	0.016	0.026	0.016
Recovery*Black	**0.044**	0.011	**0.036**	0.012	**0.031**	0.013
Pre-Recession*Black	0.000	.	0.000	.	0.000	.
Recession*White	0.000	.	0.000	.	0.000	.
Recovery*White	0.000	.	0.000	.	0.000	.
Pre-Recession*White	0.000	.	0.000	.	0.000	.
Predisposing and Enabling Characteristics						
Sex						
Male			**-0.498**	0.003	**-0.545**	0.003
Female			0.000	.	0.000	.

Age			**-0.017**	0.000	**-0.025**	0.000
Income						
Missing/Don't Know			0.000	0.006	**-0.061**	0.006
< $15,000			**0.884**	0.006	**0.599**	0.007
$15 – 25,000			**0.524**	0.005	**0.370**	0.006
$25 – 35,000			**0.315**	0.006	**0.237**	0.006
$35 – 50,000			**0.210**	0.005	**0.166**	0.005
>$50,000 (ref.)			0.000	.	0.000	.
Education						
Some High School			**0.034**	0.007	0.001	0.007
High School Graduate			**-0.053**	0.004	**-0.064**	0.004
Some College			**0.073**	0.004	**0.037**	0.004
College Graduate (ref.)			0.000	.	0.000	.
Insurance						
Not Insured			**-0.030**	0.005	**0.032**	0.005
Insured (ref.)			0.000	.	0.000	.
Employment						
Unemployed			**0.416**	0.007	**0.309**	0.007
Neither Employed or Unemployed			**0.281**	0.004	**0.051**	0.004
Employed (ref.)			0.000	.	0.000	.
Rurality						
Non-Metro			**-0.097**	0.004	**-0.099**	0.004
MISSING			**-0.166**	0.006	**-0.160**	0.006
Metro			0.000	.	0.000	.
Need characteristics						
Disability						
Disabled					**1.059**	0.004
Not Disabled					0.000	.
Diabetes						
Diabetes					**0.195**	0.006
No Diabetes					0.000	.
Random Effects:						
State (Intercept)	0.016	0.003	0.017	0.003	0.016	0.003
Poverty Rate						
Unemployment Rate						

Note: Bolded type face indicates significant ≤ .05 (p-value)

Table E.3B. Factors associated with reporting one or more poor mental health days among working age adults, 2004 – 2010 BRFSS

	Model 4: Coef(SE)		Model 5:		Model 6	
Intercept	**-0.621**	0.083	**-0.608**	0.083	**-0.610**	0.083
Fixed Effects						
Race						
Other	**-0.360**	0.011	**-0.328**	0.019	**-0.313**	0.022
AIAN	0.017	0.015	0.042	0.023	0.053	0.027
Asian	**-0.359**	0.017	**-0.334**	0.023	**-0.323**	0.026
Black	**-0.211**	0.008	**-0.220**	0.020	**-0.211**	0.025
White (ref.)	0.000	.	0.000	.	0.000	.
Time Period						
Recovery	0.011	0.007	-0.016	0.010	-0.015	0.011
Recession	**0.010**	0.005	0.001	0.008	0.005	0.008
Pre-Recession (ref.)	0.000	.	0.000	.	0.000	.
Time-Period*Race						
Recession*Other	0.020	0.028	0.020	0.028	-0.034	0.051
Recovery*Other	**0.059**	0.019	**0.060**	0.019	0.030	0.038
Pre-Recession*Other	0.000	.	0.000	.	0.000	.
Recession*AIAN	0.042	0.032	0.049	0.032	0.067	0.059
Recovery*AIAN	0.029	0.025	0.031	0.025	-0.014	0.046
Pre-Recession*AIAN	0.000	.	0.000	.	0.000	.
Recession*Asian	**-0.070**	0.034	**-0.068**	0.034	**-0.120**	0.053
Recovery*Asian	**-0.067**	0.028	**-0.067**	0.028	-0.078	0.041
Pre-Recession*Asian	0.000	.	0.000	.	0.000	.
Recession*Black	0.029	0.016	0.012	0.016	0.060	0.051
Recovery*Black	**0.032**	0.013	**0.030**	0.013	-0.030	0.042
Pre-Recession*Black	0.000	.	0.000	.	0.000	.
Recession*White	0.000	.	0.000	.	0.000	.
Recovery*White	0.000	.	0.000	.	0.000	.
Pre-Recession*White	0.000	.	0.000	.	0.000	.
Predisposing and Enabling Characteristics						
Sex						
Male	**-0.546**	0.003	**-0.546**	0.003	**-0.546**	0.003
Female	0.000	.	0.000	.	0.000	.
Age	**-0.025**	0.000	**-0.025**	0.000	**-0.025**	0.000
Income						
Missing/Don't Know	**-0.061**	0.006	**-0.061**	0.006	**-0.061**	0.006
< $15,000	**0.605**	0.007	**0.604**	0.007	**0.604**	0.007

$15 – 25,000	**0.373**	0.006	**0.373**	0.006	**0.373**	0.006
$25 – 35,000	**0.238**	0.006	**0.238**	0.006	**0.238**	0.006
$35 – 50,000	**0.167**	0.005	**0.167**	0.005	**0.167**	0.005
>$50,000 (ref.)	0.000	.	0.000	.	0.000	.
Education						
Some High School	0.004	0.007	0.004	0.007	0.004	0.007
High School Graduate	**-0.065**	0.004	**-0.065**	0.004	**-0.065**	0.004
Some College	**0.037**	0.004	**0.037**	0.004	**0.037**	0.004
College Graduate (ref.)	0.000	.	0.000	.	0.000	.
Insurance						
Not Insured	**0.031**	0.005	**0.032**	0.005	**0.032**	0.005
Insured (ref.)	0.000	.	0.000	.	0.000	.
Employment						
Unemployed	**0.311**	0.007	**0.311**	0.007	**0.311**	0.007
Neither Employed or Unemployed	**0.050**	0.004	**0.050**	0.004	**0.050**	0.004
Employed (ref.)	0.000	.	0.000	.	0.000	.
Rurality						
Non-Metro	**-0.099**	0.004	**-0.100**	0.004	**-0.100**	0.004
MISSING	**-0.160**	0.006	**-0.159**	0.006	**-0.159**	0.006
Metro	0.000	.	0.000	.	0.000	.
Need characteristics						
Disability						
Disabled	**1.055**	0.004	**1.055**	0.004	**1.055**	0.004
Not Disabled	0.000	.	0.000	.	0.000	.
Diabetes						
Diabetes	**0.194**	0.006	**0.194**	0.006	**0.194**	0.006
No Diabetes	0.000	.	0.000	.	0.000	.
Random Effects:						
State (Intercept)	0.012	0.002	0.013	0.003	0.012	0.003
GINI Q1	-0.071	0.049	-0.083	0.049	-0.078	0.049
GINI Q2	**-0.099**	0.045	**-0.109**	0.046	**-0.107**	0.046
GINI Q3	-0.075	0.043	-0.075	0.044	-0.076	0.044
GINI Q4	0.000	.	0.000	.	0.000	.
Poverty Rate	-0.059	0.461	-0.081	0.463	-0.082	0.462
Unemployment Rate	-0.003	0.001	**-0.003**	0.001	**-0.003**	0.001

RACE*GINI						
OTHER*GINI Q1			-0.017	0.023	-0.039	0.029
OTHER*GINI Q2			**-0.088**	0.025	**-0.121**	0.033
OTHER*GINI Q3			-0.030	0.024	-0.043	0.032
OTHER*GINI Q4			0.000	.	0.000	.
AIAN*GINI Q1			-0.028	0.039	-0.095	0.052
AIAN*GINI Q2			0.014	0.031	-0.002	0.041
AIAN*GINI Q3			**-0.084**	0.028	**-0.079**	0.038
AIAN*GINI Q4			0.000	.	0.000	.
ASIAN*GINI Q1			-0.065	0.034	-0.090	0.046
ASIAN*GINI Q2			0.014	0.033	-0.029	0.045
ASIAN*GINI Q3			**-0.100**	0.041	-0.075	0.054
ASIAN*GINI Q4			0.000	.	0.000	.
BLACK*GINI Q1			**0.030**	0.021	0.001	0.028
BLACK*GINI Q2			**0.010**	0.021	0.004	0.029
BLACK*GINI Q3			**-0.017**	0.024	0.003	0.031
BLACK*GINI Q4			0.000	.	0.000	.
WHITE*GINI Q1			0.000	.	0.000	.
WHITE*GINI Q2			0.000	.	0.000	.
WHITE*GINI Q3			0.000	.	0.000	.
WHITE*GINI Q4			0.000	.	0.000	.
TIME*GINI						
RECOVERY*GINI Q1			**0.073**	0.013	**0.063**	0.014
RECOVERY*GINI Q2			**0.034**	0.013	**0.031**	0.014
RECOVERY*GINI Q3			0.023	0.013	**0.030**	0.014
RECOVERY*GINI Q4			0.000	.	0.000	.
RECESSION*GINI Q1			0.004	0.011	-0.010	0.012
RECESSION*GINI Q2			**0.030**	0.010	**0.024**	0.011
RECESSION*GINI Q3			0.010	0.010	0.011	0.011
RECESSION*GINI Q4			0.000	.	0.000	.
PRE-RECESSION *GINI Q1			0.000	.	0.000	.
PRE-RECESSION *GINI Q2			0.000	.	0.000	.
PRE-RECESSION *GINI Q3			0.000	.	0.000	.

PRE-RECESSION *GINI Q4			0.000	.	0.000	.
RACE*TIME*GINI						
OTHER *PRE-RECESSION *GINI Q1					0.074	0.078
OTHER* PRE-RECESSION* GINI Q2					0.108	0.079
OTHER *PRE-RECESSION *GINI Q3					0.057	0.075
OTHER *PRE-RECESSION *GINI Q4					0.000	.
OTHER *PRE-RECESSION *GINI Q1					0.042	0.052
OTHER *PRE-RECESSION *GINI Q2					0.067	0.056
OTHER *PRE-RECESSION *GINI Q3					0.020	0.054
OTHER *PRE-RECESSION *GINI Q4					0.000	.
OTHER *PRE-RECESSION *GINI Q1					0.000	.
OTHER *PRE-RECESSION *GINI Q2					0.000	.
OTHER *PRE-RECESSION *GINI Q3					0.000	.
OTHER *PRE-RECESSION *GINI Q4					0.000	.
AIAN *PRE-RECESSION *GINI Q1					0.045	0.105
AIAN * PRE-RECESSION* GINI Q2					-0.019	0.088

AIAN *PRE-RECESSION *GINI Q3					-0.060	0.081
AIAN *PRE-RECESSION *GINI Q4					0.000	.
AIAN *PRE-RECESSION *GINI Q1					**0.219**	0.091
AIAN *PRE-RECESSION *GINI Q2					0.064	0.069
AIAN *PRE-RECESSION *GINI Q3					0.017	0.063
AIAN *PRE-RECESSION *GINI Q4					0.000	.
AIAN *PRE-RECESSION *GINI Q1					0.000	.
AIAN *PRE-RECESSION *GINI Q2					0.000	.
AIAN *PRE-RECESSION *GINI Q3					0.000	.
AIAN *PRE-RECESSION *GINI Q4					0.000	.
ASIAN *PRE-RECESSION *GINI Q1					0.089	0.091
ASIAN * PRE-RECESSION* GINI Q2					0.109	0.086
ASIAN *PRE-RECESSION *GINI Q3					0.071	0.116
ASIAN *PRE-RECESSION *GINI Q4					0.000	.
ASIAN *PRE-RECESSION *GINI Q1					0.038	0.076

ASIAN *PRE-RECESSION *GINI Q2					0.074	0.070
ASIAN *PRE-RECESSION *GINI Q3					-0.116	0.090
ASIAN *PRE-RECESSION *GINI Q4					0.000	.
ASIAN *PRE-RECESSION *GINI Q1					0.000	.
ASIAN *PRE-RECESSION *GINI Q2					0.000	.
ASIAN *PRE-RECESSION *GINI Q3					0.000	.
ASIAN *PRE-RECESSION *GINI Q4					0.000	.
BLACK *PRE-RECESSION *GINI Q1					-0.005	0.057
BLACK * PRE-RECESSION* GINI Q2					-0.057	0.059
BLACK *PRE-RECESSION *GINI Q3					**-0.154**	0.065
BLACK *PRE-RECESSION *GINI Q4					0.000	.
BLACK *PRE-RECESSION *GINI Q1					**0.103**	0.047
BLACK *PRE-RECESSION *GINI Q2					0.052	0.048
BLACK *PRE-RECESSION *GINI Q3					0.019	0.052
BLACK *PRE-RECESSION *GINI Q4					0.000	.

BLACK *PRE-RECESSION *GINI Q1					0.000	.
BLACK *PRE-RECESSION *GINI Q2					0.000	.
BLACK *PRE-RECESSION *GINI Q3					0.000	.
BLACK *PRE-RECESSION *GINI Q4					0.000	.
WHITE *PRE-RECESSION *GINI Q1					0.000	.
WHITE * PRE-RECESSION* GINI Q2					0.000	.
WHITE *PRE-RECESSION *GINI Q3					0.000	.
WHITE *PRE-RECESSION *GINI Q4					0.000	.
WHITE *PRE-RECESSION *GINI Q1					0.000	.
WHITE *PRE-RECESSION *GINI Q2					0.000	.
WHITE *PRE-RECESSION *GINI Q3					0.000	.
WHITE *PRE-RECESSION *GINI Q4					0.000	.
WHITE *PRE-RECESSION *GINI Q1					0.000	.
WHITE *PRE-RECESSION *GINI Q2					0.000	.
WHITE *PRE-RECESSION *GINI Q3					0.000	.

WHITE *PRE-RECESSION *GINI Q4					0.000	.

Note: Bolded type face indicates significant ≤ .05 (p-value)

Table E.3C. Factors associated with reporting one or more poor mental health days among working age adults, 2004 – 2010 BRFSS: Medicaid Generosity of Parents of Dependent Children

	Model 4: Coef(SE)		Model 5:		Model 6	
Intercept	**-0.637**	0.088	**-0.623**	0.086	**-0.622**	0.086
Fixed Effects						
Race						
Other	**-0.368**	0.013	**-0.338**	0.018	**-0.341**	0.022
AIAN	0.019	0.018	0.054	0.030	0.058	0.042
Asian	**-0.365**	0.020	**-0.358**	0.024	**-0.383**	0.028
Black	**-0.223**	0.009	**-0.250**	0.014	**-0.262**	0.018
White (ref.)	0.000	.	0.000	.	0.000	.
Time Period						
Recovery	**0.016**	0.008	-0.011	0.011	-0.015	0.011
Recession	**0.010**	0.005	0.001	0.008	-0.002	0.009
Pre-Recession (ref.)	0.000	.	0.000	.	0.000	.
Time-Period*Race						
Recession*Other	0.032	0.029	0.026	0.029	0.019	0.040
Recovery*Other	**0.068**	0.020	**0.067**	0.020	**0.080**	0.032
Pre-Recession*Other	0.000	.	0.000	.	0.000	.
Recession*AIAN	0.045	0.033	0.033	0.034	0.043	0.060
Recovery*AIAN	0.027	0.027	0.025	0.027	0.003	0.061
Pre-Recession*AIAN	0.000	.	0.000	.	0.000	.
Recession*Asian	-0.064	0.036	-0.055	0.036	-0.035	0.044
Recovery*Asian	-0.058	0.030	-0.056	0.030	-0.001	0.038
Pre-Recession*Asian	0.000	.	0.000	.	0.000	.
Recession*Black	**0.043**	0.017	**0.046**	0.017	**0.086**	0.029
Recovery*Black	**0.048**	0.014	**0.050**	0.014	**0.055**	0.026
Pre-Recession*Black	0.000	.	0.000	.	0.000	.
Recession*White	0.000	.	0.000	.	0.000	.
Recovery*White	0.000	.	0.000	.	0.000	.
Pre-Recession*White	0.000	.	0.000	.	0.000	.
Predisposing and Enabling Characteristics						
Sex						
Male	**-0.546**	0.004	**-0.546**	0.004	**-0.546**	0.004
Female	0.000	.	0.000	.	0.000	.
Age	**-0.025**	0.000	**-0.025**	0.000	**-0.025**	0.000
Income						
Missing/Don't Know	**-0.064**	0.007	**-0.064**	0.007	**-0.064**	0.007
< $15,000	**0.599**	0.007	**0.598**	0.007	**0.598**	0.007

$15 – 25,000	**0.371**	0.006	**0.371**	0.006	**0.371**	0.006
$25 – 35,000	**0.233**	0.006	**0.233**	0.006	**0.233**	0.006
$35 – 50,000	**0.167**	0.005	**0.167**	0.005	**0.167**	0.005
>$50,000 (ref.)	0.000	.	0.000	.	0.000	.
Education						
Some High School	0.009	0.008	0.009	0.008	0.009	0.008
High School Graduate	**-0.064**	0.005	**-0.064**	0.005	**-0.064**	0.005
Some College	**0.039**	0.005	**0.039**	0.005	**0.039**	0.005
College Graduate (ref.)	0.000	.	0.000	.	0.000	.
Insurance						
Not Insured	**0.037**	0.005	**0.037**	0.005	**0.037**	0.005
Insured (ref.)	0.000	.	0.000	.	0.000	.
Employment						
Unemployed	**0.307**	0.008	**0.307**	0.008	**0.306**	0.008
Neither Employed or Unemployed	**0.050**	0.004	**0.050**	0.004	**0.050**	0.004
Employed (ref.)	0.000	.	0.000	.	0.000	.
Rurality						
Non-Metro	**-0.101**	0.005	**-0.101**	0.005	**-0.101**	0.005
MISSING	**-0.163**	0.006	**-0.163**	0.006	**-0.163**	0.006
Metro	0.000	.	0.000	.	0.000	.
Need characteristics						
Disability						
Disabled	**1.055**	0.005	**1.055**	0.005	**1.055**	0.005
Not Disabled	0.000	.	0.000	.	0.000	.
Diabetes						
Diabetes	**0.191**	0.007	**0.191**	0.007	**0.191**	0.007
No Diabetes	0.000	.	0.000	.	0.000	.
Random Effects:						
State (Intercept)	0.015	0.003	0.015	0.003	0.015	0.003
Medicaid Generosity for Parents						
Medicaid Generosity <100% FPL	**0.044**	0.010	**0.024**	0.011	0.020	0.011
Medicaid Generosity ≥100% FPL	0.000	.	0.000	.	0.000	.
Poverty Rate	-0.420	0.453	-0.426	0.445	-0.424	0.445
Unemployment Rate	-0.003	0.001	-0.002	0.001	-0.002	0.001

Time-Period*Medicaid Generosity						
RECOVERY*Eligibility <100% FPL			**0.039**	0.011	**0.046**	0.012
RECOVERY*Eligibility ≥100% FPL			0.000	.	0.000	.
RECESSION*Eligibility <100% FPL			0.013	0.009	0.016	0.010
RECESSION*Eligibility ≥100% FPL			0.000	.	0.000	.
PRE-RECESSION*Eligibility <100% FPL			0.000	.	0.000	.
PRE-RECESSION*Eligibility ≥100% FPL			0.000	.	0.000	.
Race*Medicaid Generosity						
OTHER *Eligibility <100% FPL			**-0.050**	0.019	-0.044	0.027
OTHER* Eligibility ≥100% FPL			0.000	.	0.000	.
AIAN * Eligibility <100% FPL			-0.042	0.029	-0.046	0.046
AIAN* Eligibility ≥100% FPL			0.000	.	0.000	.
ASIAN * Eligibility <100% FPL			-0.021	0.029	0.039	0.041
ASIAN* Eligibility ≥100% FPL			0.000	.	0.000	.
BLACK * Eligibility <100% FPL			**0.037**	0.014	**0.054**	0.021
BLACK* Eligibility ≥100% FPL			0.000	.	0.000	.
WHITE * Eligibility <100% FPL			0.000	.	0.000	.
WHITE* Eligibility ≥100% FPL			0.000	.	0.000	.
Race*Time-Period*Medicaid Generosity						
OTHER*RECOVERY*Eligibility <100% FPL					0.021	0.059
OTHER*RECOVERY* Eligibility ≥100% FPL					0.000	.
OTHER*RECESSION*Eligibility <100% FPL					-0.022	0.042

OTHER*RECESSION* Eligibility ≥100% FPL					0.000	.
OTHER*PRE-RECESSION*Eligibility <100% FPL					0.000	.
OTHER*PRE-RECESSION* Eligibility ≥100% FPL					0.000	.
AIAN*RECOVERY*Eligibility <100% FPL					-0.020	0.074
AIAN*RECOVERY* Eligibility ≥100% FPL					0.000	.
AIAN*RECESSION*Eligibility <100% FPL					0.027	0.068
AIAN*RECESSION* Eligibility ≥100% FPL					0.000	.
AIAN*PRE-RECESSION*Eligibility <100% FPL					0.000	.
AIAN*PRE-RECESSION* Eligibility ≥100% FPL					0.000	.
ASIAN*RECOVERY*Eligibility <100% FPL					-0.037	0.078
ASIAN*RECOVERY* Eligibility ≥100% FPL					0.000	.
ASIAN*RECESSION*Eligibility <100% FPL					**-0.151**	0.062
ASIAN*RECESSION* Eligibility ≥100% FPL					0.000	.
ASIAN*PRE-RECESSION*Eligibility <100% FPL					0.000	.
ASIAN*PRE-RECESSION* Eligibility ≥100% FPL					0.000	.
BLACK*RECOVERY*Eligibility <100% FPL					-0.063	0.036
BLACK*RECOVERY* Eligibility ≥100% FPL					0.000	.
BLACK*RECESSION*Eligibility <100% FPL					-0.007	0.030
BLACK*RECESSION* Eligibility ≥100% FPL					0.000	.
BLACK*PRE-RECESSION*Eligibility <100% FPL					0.000	.
BLACK*PRE-RECESSION* Eligibility ≥100% FPL					0.000	.

WHITE*RECOVERY*Eligibility <100% FPL					0.000	.
WHITE*RECOVERY* Eligibility ≥100% FPL					0.000	.
WHITE*RECESSION*Eligibility <100% FPL					0.000	.
WHITE*RECESSION* Eligibility ≥100% FPL					0.000	.
WHITE*PRE-RECESSION*Eligibility <100% FPL					0.000	.
WHITE*PRE-RECESSION* Eligibility ≥100% FPL					0.000	.

Note: Bolded type face indicates significant ≤ .05 (p-value)

Table E.3D. Factors associated with reporting one or more poor mental health days among working age adults, 2004 – 2010 BRFSS: Medicaid Generosity for Childless adults

	Model 4: Coef(SE)		Model 5:		Model 6	
Intercept	**-0.624**	0.083	**-0.632**	0.083	**-0.631**	0.083
Fixed Effects						
Race						
Other	**-0.360**	0.011	**-0.343**	0.028	**-0.338**	0.037
AIAN	0.017	0.015	0.012	0.028	-0.005	0.035
Asian	**-0.359**	0.017	**-0.409**	0.062	**-0.337**	0.089
Black	**-0.211**	0.008	**-0.126**	0.030	**-0.171**	0.054
White (ref.)	0.000	.	0.000	.	0.000	.
Time Period						
Recovery	0.012	0.007	0.018	0.015	0.011	0.016
Recession	**0.011**	0.005	**0.026**	0.012	**0.027**	0.013
Pre-Recession (ref.)	0.000	.	0.000	.	0.000	.
Time-Period*Race						
Recession*Other	0.019	0.028	0.019	0.028	-0.007	0.074
Recovery*Other	**0.059**	0.019	**0.059**	0.019	0.056	0.058
Pre-Recession*Other	0.000	.	0.000	.	0.000	.
Recession*AIAN	0.042	0.032	0.041	0.032	0.129	0.072
Recovery*AIAN	0.029	0.025	0.027	0.025	0.037	0.057
Pre-Recession*AIAN	0.000	.	0.000	.	0.000	.
Recession*Asian	-0.071	0.034	-0.062	0.034	-0.251	0.164
Recovery*Asian	**-0.067**	0.028	**-0.062**	0.028	-0.168	0.138
Pre-Recession*Asian	0.000	.	0.000	.	0.000	.
Recession*Black	0.029	0.016	0.025	0.016	**0.166**	0.075
Recovery*Black	**0.032**	0.013	**0.030**	0.013	0.038	0.069
Pre-Recession*Black	0.000	.	0.000	.	0.000	.
Recession*White	0.000	.	0.000	.	0.000	.
Recovery*White	0.000	.	0.000	.	0.000	.
Pre-Recession*White	0.000	.	0.000	.	0.000	.
Predisposing and Enabling Characteristics						
Sex						
Male	**-0.546**	0.003	**-0.546**	0.003	**-0.546**	0.003
Female	0.000	.	0.000	.	0.000	.
Age	**-0.025**	0.000	**-0.025**	0.000	**-0.025**	0.000
Income						
Missing/Don't Know	**-0.061**	0.006	**-0.061**	0.006	**-0.061**	0.006
< $15,000	**0.605**	0.007	**0.604**	0.007	**0.604**	0.007
$15 – 25,000	**0.373**	0.006	**0.373**	0.006	**0.373**	0.006

$25 – 35,000	**0.238**	0.006	**0.238**	0.006	**0.238**	0.006
$35 – 50,000	**0.167**	0.005	**0.167**	0.005	**0.167**	0.005
>$50,000 (ref.)	0.000	.	0.000	.	0.000	.
Education						
Some High School	0.004	0.007	0.005	0.007	0.005	0.007
High School Graduate	**-0.065**	0.004	**-0.065**	0.004	**-0.065**	0.004
Some College	**0.037**	0.004	**0.037**	0.004	**0.037**	0.004
College Graduate (ref.)	0.000	.	0.000	.	0.000	.
Insurance						
Not Insured	**0.031**	0.005	**0.031**	0.005	**0.031**	0.005
Insured (ref.)	0.000	.	0.000	.	0.000	.
Employment						
Unemployed	**0.311**	0.007	**0.311**	0.007	**0.311**	0.007
Neither Employed or Unemployed	**0.050**	0.004	**0.050**	0.004	**0.050**	0.004
Employed (ref.)	0.000	.	0.000	.	0.000	.
Rurality						
Non-Metro	**-0.099**	0.004	**-0.099**	0.004	**-0.099**	0.004
MISSING	**-0.160**	0.006	**-0.159**	0.006	**-0.159**	0.006
Metro	0.000	.	0.000	.	0.000	.
Need characteristics						
Disability						
Disabled	**1.055**	0.004	**1.055**	0.004	**1.055**	0.004
Not Disabled	0.000	.	0.000	.	0.000	.
Diabetes						
Diabetes	**0.194**	0.006	**0.194**	0.006	**0.194**	0.006
No Diabetes	0.000	.	0.000	.	0.000	.
Random Effects:						
State (Intercept)	0.013	0.003	0.013	0.003	0.013	0.003
Medicaid Generosity for Parents						
No Coverage for Childless Adults	0.014	0.014	0.028	0.016	0.028	0.016
Medicaid Generosity of Childless Adults Eligibility <133%FPL	0.084	0.049	**0.108**	0.050	0.105	0.050
Medicaid Generosity of Childless Adults Eligibility ≥133%FPL	0.000	.	0.000	.	0.000	.
Poverty Rate	-0.458	0.423	-0.495	0.424	-0.494	0.424

Unemployment Rate	-0.003	0.001	-0.003	0.001	-0.003	0.001
Time-Period*Medicaid Generosity						
RECOVERY*No Coverage			-0.002	0.016	0.005	0.017
RECOVERY* Eligibility <133%FPL			-0.034	0.021	-0.013	0.022
RECOVERY*Eligibility ≥133%FPL			0.000	.	0.000	.
RECESSION*NO COVERAGE			-0.015	0.013	-0.016	0.014
RECESSION* Eligibility <133%FPL			-0.031	0.016	-0.032	0.018
RECESSION*Eligibility ≥133%FPL			0.000	.	0.000	.
PRE-RECESSION*NO COVERAGE			0.000	.	0.000	.
PRE-RECESSION* Eligibility <133%FPL			0.000	.	0.000	.
PRE-RECESSION*Eligibility ≥133%FPL			0.000	.	0.000	.
RACE*MEDICAID GENEROSITY						
OTHER * NO COVERAGE L			-0.034	0.028	-0.037	0.039
OTHER* Eligibility <133%FPL			0.047	0.034	0.031	0.046
OTHER*Eligibility ≥133%FPL			0.000	.	0.000	.
AIAN * NO COVERAGE			0.003	0.029	0.020	0.039
AIAN* Eligibility <133%FPL			0.044	0.047	0.100	0.063
AIAN*Eligibility ≥133%FPL			0.000	.	0.000	.
ASIAN * NO COVERAGE			0.044	0.063	-0.036	0.091
ASIAN* Eligibility <133%FPL			0.070	0.065	0.002	0.094
ASIAN*Eligibility ≥133%FPL			0.000	.	0.000	.
BLACK * NO COVERAGE			**-0.077**	0.030	-0.034	0.054
BLACK* Eligibility <133%FPL			**-0.171**	0.035	-0.103	0.059
BLACK*Eligibility ≥133%FPL			0.000	.	0.000	.
WHITE * NO COVERAGE			0.000	.	0.000	.

WHITE* Eligibility <133%FPL			0.000	.	0.000	.
WHITE*Eligibility ≥133%FPL			0.000	.	0.000	.
RACE*TIME-PERIOD*GENEROSITY						
OTHER*RECOVERY*NO COVERAGE					0.030	0.082
OTHER*RECOVERY* Eligibility <133%FPL					0.027	0.099
OTHER*RECOVERY* Eligibility ≥133%FPL					0.000	.
OTHER*RECESSION* NO COVERAGE					-0.007	0.062
OTHER*RECESSION* Eligibility <133%FPL					0.044	0.074
OTHER*RECESSION* Eligibility ≥133%FPL					0.000	.
OTHER*PRE-RECESSION*NO COVERAGE					0.000	.
OTHER*PRE-RECESSION* Eligibility <133%FPL					0.000	.
OTHER*PRE-RECESSION* Eligibility ≥133%FPL					0.000	.
AIAN*RECOVERY*NO COVERAGE					-0.101	0.081
AIAN*RECOVERY* Eligibility <133%FPL					-0.178	0.133
AIAN*RECOVERY* Eligibility ≥133%FPL					0.000	.
AIAN*RECESSION* NO COVERAGE					-0.003	0.065
AIAN*RECESSION* Eligibility <133%FPL					-0.098	0.105
AIAN*RECESSION* Eligibility ≥133%FPL					0.000	.
AIAN*PRE-RECESSION*NO COVERAGE					0.000	.
AIAN*PRE-RECESSION* Eligibility <133%FPL					0.000	.
AIAN*PRE-RECESSION* Eligibility ≥133%FPL					0.000	.
ASIAN*RECOVERY*NO COVERAGE					0.231	0.170
ASIAN*RECOVERY* Eligibility <133%FPL					0.125	0.175

ASIAN*RECOVERY* Eligibility ≥133%FPL					0.000	.
ASIAN*RECESSION* NO COVERAGE					0.103	0.143
ASIAN*RECESSION* Eligibility <133%FPL					0.122	0.146
ASIAN*RECESSION* Eligibility ≥133%FPL					0.000	.
ASIAN*PRE-RECESSION*NO COVERAGE					0.000	.
ASIAN*PRE-RECESSION* Eligibility <133%FPL					0.000	.
ASIAN*PRE-RECESSION* Eligibility ≥133%FPL					0.000	.
BLACK*RECOVERY*NO COVERAGE					-0.138	0.077
BLACK*RECOVERY* Eligibility <133%FPL					**-0.244**	0.091
BLACK*RECOVERY* Eligibility ≥133%FPL					0.000	.
BLACK*RECESSION* NO COVERAGE					-0.004	0.070
BLACK*RECESSION* Eligibility <133%FPL					-0.029	0.081
BLACK*RECESSION* Eligibility ≥133%FPL					0.000	.
BLACK*PRE-RECESSION*NO COVERAGE					0.000	.
BLACK*PRE-RECESSION* Eligibility <133%FPL					0.000	.
BLACK*PRE-RECESSION* Eligibility ≥133%FPL					0.000	.
WHITE*RECOVERY*NO COVERAGE					0.000	.
WHITE*RECOVERY* Eligibility <133%FPL					0.000	.
WHITE*RECOVERY* Eligibility ≥133%FPL					0.000	.
WHITE*RECESSION* NO COVERAGE					0.000	.
WHITE*RECESSION* Eligibility <133%FPL					0.000	.
WHITE*RECESSION* Eligibility ≥133%FPL					0.000	.
WHITE*PRE-RECESSION*NO COVERAGE					0.000	.

WHITE*PRE-RECESSION* Eligibility <133%FPL					0.000	.
WHITE*PRE-RECESSION* Eligibility ≥133%FPL					0.000	.

Note: Bolded type face indicates significant ≤ .05 (p-value)

Physical health days

Table E.4A. Factors associated with reporting one or more poor physical health days among working age adults, 2004 – 2010 BRFSS

	Model 1: Coef(SE)		Model 2:		Model 3	
Intercept	**-0.564**	0.014	**-0.843**	0.011	**-1.013**	0.011
Fixed Effects						
Race						
Other	**-0.077**	0.009	**-0.271**	0.011	**-0.197**	0.011
AIAN	**0.318**	0.013	**0.119**	0.015	**0.063**	0.016
Asian	**-0.334**	0.015	**-0.326**	0.017	**-0.206**	0.018
Black	**0.112**	0.007	**-0.112**	0.008	**-0.077**	0.008
White (ref.)	0.000	.	0.000	.	0.000	.
Time Period						
Recovery	**0.017**	0.004	**-0.020**	0.005	**-0.059**	0.005
Recession	**0.027**	0.003	**0.031**	0.004	**0.013**	0.004
Pre-Recession (ref.)	0.000	.	0.000	.	0.000	.
Time-Period*Race						
Recession*Other	0.000	0.022	0.024	0.026	0.001	0.028
Recovery*Other	**0.112**	0.016	**0.114**	0.018	**0.096**	0.019
Pre-Recession*Other	0.000	.	0.000	.	0.000	.
Recession*AIAN	0.034	0.027	0.026	0.031	0.023	0.033
Recovery*AIAN	0.037	0.021	0.009	0.025	-0.007	0.026
Pre-Recession*AIAN	0.000	.	0.000	.	0.000	.
Recession*Asian	**-0.104**	0.029	**-0.081**	0.034	-0.067	0.035
Recovery*Asian	-0.040	0.024	-0.012	0.027	-0.007	0.028
Pre-Recession*Asian	0.000	.	0.000	.	0.000	.
Recession*Black	**0.039**	0.013	**0.032**	0.016	**0.036**	0.017
Recovery*Black	**0.044**	0.011	**0.038**	0.012	**0.030**	0.013
Pre-Recession*Black	0.000	.	0.000	.	0.000	.
Recession*White	0.000	.	0.000	.	0.000	.
Recovery*White	0.000	.	0.000	.	0.000	.
Pre-Recession*White	0.000	.	0.000	.	0.000	.
Predisposing and Enabling Characteristics						
Sex						
Male			**-0.209**	0.003	**-0.278**	0.003
Female			0.000	.	0.000	.

Age			**0.002**	0.000	**-0.009**	0.000
Income						
Missing/Don't Know			**0.133**	0.006	**0.045**	0.006
< $15,000			**0.968**	0.006	**0.553**	0.007
$15 – 25,000			**0.561**	0.005	**0.327**	0.006
$25 – 35,000			**0.308**	0.006	**0.185**	0.006
$35 – 50,000			**0.185**	0.005	**0.115**	0.005
>$50,000 (ref.)			0.000	.	0.000	.
Education						
Some High School			**0.129**	0.007	**0.076**	0.007
High School Graduate			**-0.026**	0.004	**-0.051**	0.004
Some College			**0.078**	0.004	**0.017**	0.004
College Graduate (ref.)			0.000	.	0.000	.
Insurance						
Not Insured			**-0.172**	0.005	**-0.084**	0.005
Insured (ref.)			0.000	.	0.000	.
Employment						
Unemployed			**0.293**	0.007	**0.117**	0.007
Neither Employed or Unemployed			**0.583**	0.004	**0.260**	0.004
Employed (ref.)			0.000	.	0.000	.
Rurality						
Non-Metro			**-0.045**	0.004	**-0.046**	0.004
MISSING			**-0.088**	0.005	**-0.076**	0.006
Metro			0.000	.	0.000	.
Need characteristics						
Disability						
Disabled					**1.611**	0.004
Not Disabled					0.000	.
Diabetes						
Diabetes					**0.614**	0.006
No Diabetes					0.000	.
Random Effects:						
State (Intercept)	0.009	0.002	0.006	0.001	0.005	0.001
Poverty Rate						
Unemployment Rate						

Note: Bolded type face indicates significant ≤ .05 (p-value)

Table E.4B. Factors associated with reporting one or more poor physical health days among working age adults, 2004 – 2010 BRFSS

	Model 4: Coef(SE)		Model 5:		Model 6	
Intercept	**-0.987**	0.050	-0.978	0.049	**-0.979**	0.049
Fixed Effects						
Race						
Other	**-0.218**	0.011	**-0.175**	0.019	**-0.146**	0.022
AIAN	**0.062**	0.016	**0.100**	0.024	**0.079**	0.028
Asian	**-0.207**	0.018	**-0.157**	0.024	**-0.150**	0.027
Black	**-0.080**	0.008	**-0.052**	0.020	**-0.083**	0.026
White (ref.)	0.000	.	0.000	.	0.000	.
Time Period						
Recovery	**-0.062**	0.008	**-0.105**	0.011	**-0.107**	0.011
Recession	**0.012**	0.005	0.007	0.008	0.007	0.008
Pre-Recession (ref.)	0.000	.	0.000	.	0.000	.
Time-Period*Race						
Recession*Other	0.027	0.029	0.027	0.029	-0.077	0.052
Recovery*Other	**0.119**	0.019	**0.119**	0.019	0.065	0.038
Pre-Recession*Other	0.000	.	0.000	.	0.000	.
Recession*AIAN	0.022	0.033	0.030	0.033	**0.127**	0.061
Recovery*AIAN	-0.007	0.026	-0.003	0.026	0.020	0.047
Pre-Recession*AIAN	0.000	.	0.000	.	0.000	.
Recession*Asian	**-0.069**	0.035	-0.059	0.035	-0.100	0.054
Recovery*Asian	-0.009	0.028	-0.003	0.028	-0.010	0.041
Pre-Recession*Asian	0.000	.	0.000	.	0.000	.
Recession*Black	**0.037**	0.017	0.015	0.017	**0.135**	0.053
Recovery*Black	**0.030**	0.013	**0.033**	0.013	0.074	0.043
Pre-Recession*Black	0.000	.	0.000	.	0.000	.
Recession*White	0.000	.	0.000	.	0.000	.
Recovery*White	0.000	.	0.000	.	0.000	.
Pre-Recession*White	0.000	.	0.000	.	0.000	.
Predisposing and Enabling Characteristics						
Sex						
Male	**-0.276**	0.003	**-0.276**	0.003	**-0.276**	0.003
Female	0.000	.	0.000	.	0.000	.
Age	**-0.009**	0.000	**-0.009**	0.000	**-0.009**	0.000
Income						
Missing/Don't Know	**0.044**	0.006	**0.044**	0.006	**0.044**	0.006
< $15,000	**0.559**	0.007	**0.560**	0.007	**0.560**	0.007

$15 – 25,000	**0.328**	0.006	**0.328**	0.006	**0.328**	0.006
$25 – 35,000	**0.183**	0.006	**0.183**	0.006	**0.183**	0.006
$35 – 50,000	**0.114**	0.005	**0.114**	0.005	**0.114**	0.005
>$50,000 (ref.)	0.000	.	0.000	.	0.000	.
Education						
Some High School	**0.078**	0.007	**0.077**	0.007	**0.077**	0.007
High School Graduate	**-0.051**	0.005	**-0.051**	0.005	**-0.051**	0.005
Some College	**0.018**	0.004	**0.018**	0.004	**0.018**	0.004
College Graduate (ref.)	0.000	.	0.000	.	0.000	.
Insurance						
Not Insured	**-0.084**	0.005	**-0.084**	0.005	**-0.084**	0.005
Insured (ref.)	0.000	.	0.000	.	0.000	.
Employment						
Unemployed	**0.119**	0.007	**0.119**	0.007	**0.119**	0.007
Neither Employed or Unemployed	**0.262**	0.004	**0.262**	0.004	**0.262**	0.004
Employed (ref.)	0.000	.	0.000	.	0.000	.
Rurality						
Non-Metro	**-0.047**	0.004	**-0.047**	0.004	-0.047	0.004
MISSING	**-0.076**	0.006	**-0.075**	0.006	-0.075	0.006
Metro	0.000	.	0.000	.	0.000	.
Need characteristics						
Disability						
Disabled	**1.611**	0.004	**1.611**	0.004	**1.611**	0.004
Not Disabled	0.000	.	0.000	.	0.000	.
Diabetes						
Diabetes	**0.616**	0.006	**0.616**	0.006	**0.616**	0.006
No Diabetes	0.000	.	0.000	.	0.000	.
Random Effects:						
State (Intercept)	0.004	0.001	0.004	0.001	0.004	0.001
GINI Q1	-0.030	0.029	-0.040	0.029	-0.037	0.029
GINI Q2	-0.032	0.027	-0.033	0.027	-0.035	0.027
GINI Q3	**-0.079**	0.026	**-0.081**	0.026	**-0.081**	0.026
GINI Q4	0.000	.	0.000	.	0.000	.
Poverty Rate	-0.006	0.276	-0.024	0.274	-0.022	0.274
Unemployment Rate	0.001	0.001	0.001	0.001	0.001	0.001

RACE*GINI						
OTHER*GINI Q1			-0.042	0.024	**-0.093**	0.030
OTHER*GINI Q2			**-0.075**	0.026	**-0.091**	0.033
OTHER*GINI Q3			**-0.051**	0.025	**-0.092**	0.032
OTHER*GINI Q4			0.000	.	0.000	.
AIAN*GINI Q1			0.054	0.040	0.065	0.053
AIAN*GINI Q2			0.009	0.032	0.046	0.042
AIAN*GINI Q3			**-0.149**	0.030	**-0.116**	0.040
AIAN*GINI Q4			0.000	.	0.000	.
ASIAN*GINI Q1			-0.064	0.035	-0.069	0.047
ASIAN*GINI Q2			**-0.081**	0.033	**-0.103**	0.046
ASIAN*GINI Q3			**-0.118**	0.041	**-0.137**	0.056
ASIAN*GINI Q4			0.000	.	0.000	.
BLACK*GINI Q1			-0.032	0.022	-0.014	0.029
BLACK*GINI Q2			-0.015	0.022	0.033	0.029
BLACK*GINI Q3			-0.048	0.024	-0.002	0.032
BLACK*GINI Q4			0.000	.	0.000	.
WHITE*GINI Q1			0.000	.	0.000	.
WHITE*GINI Q2			0.000	.	0.000	.
WHITE*GINI Q3			0.000	.	0.000	.
WHITE*GINI Q4			0.000	.	0.000	.
TIME*GINI						
RECOVERY*GINI Q1			**0.111**	0.014	**0.099**	0.015
RECOVERY*GINI Q2			**0.042**	0.014	**0.052**	0.015
RECOVERY*GINI Q3			**0.037**	0.014	**0.046**	0.015
RECOVERY*GINI Q4			0.000	.	0.000	.
RECESSION*GINI Q1			-0.001	0.011	-0.005	0.012
RECESSION*GINI Q2			0.000	0.011	0.004	0.011
RECESSION*GINI Q3			**0.025**	0.011	**0.023**	0.011
RECESSION*GINI Q4			0.000	.	0.000	.
PRE-RECESSION *GINI Q1			0.000	.	0.000	.
PRE-RECESSION *GINI Q2			0.000	.	0.000	.
PRE-RECESSION *GINI Q3			0.000	.	0.000	.

PRE-RECESSION *GINI Q4			0.000	.	0.000	.
RACE*TIME*GINI						
OTHER *PRE-RECESSION *GINI Q1					**0.168**	0.080
OTHER* PRE-RECESSION* GINI Q2					0.129	0.081
OTHER *PRE-RECESSION *GINI Q3					0.143	0.077
OTHER *PRE-RECESSION *GINI Q4					0.000	.
OTHER *PRE-RECESSION *GINI Q1					**0.113**	0.053
OTHER *PRE-RECESSION *GINI Q2					0.003	0.058
OTHER *PRE-RECESSION *GINI Q3					0.081	0.055
OTHER *PRE-RECESSION *GINI Q4					0.000	.
OTHER *PRE-RECESSION *GINI Q1					0.000	.
OTHER *PRE-RECESSION *GINI Q2					0.000	.
OTHER *PRE-RECESSION *GINI Q3					0.000	.
OTHER *PRE-RECESSION *GINI Q4					0.000	.
AIAN *PRE-RECESSION *GINI Q1					0.008	0.109
AIAN * PRE-RECESSION* GINI Q2					-0.129	0.092

AIAN *PRE-RECESSION *GINI Q3					**-0.216**	0.085
AIAN *PRE-RECESSION *GINI Q4					0.000	.
AIAN *PRE-RECESSION *GINI Q1					-0.069	0.095
AIAN *PRE-RECESSION *GINI Q2					-0.063	0.072
AIAN *PRE-RECESSION *GINI Q3					-0.005	0.065
AIAN *PRE-RECESSION *GINI Q4					0.000	.
AIAN *PRE-RECESSION *GINI Q1					0.000	.
AIAN *PRE-RECESSION *GINI Q2					0.000	.
AIAN *PRE-RECESSION *GINI Q3					0.000	.
AIAN *PRE-RECESSION *GINI Q4					0.000	.
ASIAN *PRE-RECESSION *GINI Q1					0.053	0.093
ASIAN * PRE-RECESSION* GINI Q2					0.074	0.088
ASIAN *PRE-RECESSION *GINI Q3					0.108	0.120
ASIAN *PRE-RECESSION *GINI Q4					0.000	.
ASIAN *PRE-RECESSION *GINI Q1					-0.009	0.077

ASIAN *PRE-RECESSION *GINI Q2					0.027	0.071
ASIAN *PRE-RECESSION *GINI Q3					0.016	0.090
ASIAN *PRE-RECESSION *GINI Q4					0.000	.
ASIAN *PRE-RECESSION *GINI Q1					0.000	.
ASIAN *PRE-RECESSION *GINI Q2					0.000	.
ASIAN *PRE-RECESSION *GINI Q3					0.000	.
ASIAN *PRE-RECESSION *GINI Q4					0.000	.
BLACK *PRE-RECESSION *GINI Q1					-0.060	0.059
BLACK *PRE-RECESSION* GINI Q2					**-0.192**	0.061
BLACK *PRE-RECESSION *GINI Q3					**-0.206**	0.067
BLACK *PRE-RECESSION *GINI Q4					0.000	.
BLACK *PRE-RECESSION *GINI Q1					-0.030	0.048
BLACK *PRE-RECESSION *GINI Q2					-0.063	0.049
BLACK *PRE-RECESSION *GINI Q3					-0.046	0.054
BLACK *PRE-RECESSION *GINI Q4					0.000	.
BLACK					0.000	.

*PRE-RECESSION *GINI Q1						
BLACK *PRE-RECESSION *GINI Q2					0.000	.
BLACK *PRE-RECESSION *GINI Q3					0.000	.
BLACK *PRE-RECESSION *GINI Q4					0.000	.
WHITE *PRE-RECESSION *GINI Q1					0.000	.
WHITE * PRE-RECESSION* GINI Q2					0.000	.
WHITE *PRE-RECESSION *GINI Q3					0.000	.
WHITE *PRE-RECESSION *GINI Q4					0.000	.
WHITE *PRE-RECESSION *GINI Q1					0.000	.
WHITE *PRE-RECESSION *GINI Q2					0.000	.
WHITE *PRE-RECESSION *GINI Q3					0.000	.
WHITE *PRE-RECESSION *GINI Q4					0.000	.
WHITE *PRE-RECESSION *GINI Q1					0.000	.
WHITE *PRE-RECESSION *GINI Q2					0.000	.
WHITE *PRE-RECESSION *GINI Q3					0.000	.
WHITE					0.000	.

*PRE-RECESSION *GINI Q4						

Note: Bolded type face indicates significant ≤ .05 (p-value)

Table E.4C. Factors associated with reporting one or more poor physical health days among working age adults, 2004 – 2010 BRFSS: Medicaid Generosity of Parents of Dependent Children

	Model 4: Coef(SE)		Model 5:		Model 6	
Intercept	**-1.024**	0.057	**-0.999**	0.055	**-0.996**	0.055
Fixed Effects						
Race						
Other	**-0.220**	0.014	**-0.195**	0.018	**-0.214**	0.022
AIAN	**0.057**	0.018	**0.063**	0.031	0.067	0.044
Asian	**-0.193**	0.021	**-0.161**	0.025	**-0.184**	0.028
Black	**-0.085**	0.010	**-0.131**	0.014	**-0.163**	0.019
White (ref.)	0.000	.	0.000	.	0.000	.
Time Period						
Recovery	**-0.056**	0.008	**-0.101**	0.011	**-0.110**	0.011
Recession	**0.015**	0.005	-0.006	0.009	-0.013	0.009
Pre-Recession (ref.)	0.000	.	0.000	.	0.000	.
Time-Period*Race						
Recession*Other	0.031	0.030	0.030	0.030	0.061	0.041
Recovery*Other	**0.120**	0.021	**0.121**	0.021	**0.156**	0.033
Pre-Recession*Other	0.000	.	0.000	.	0.000	.
Recession*AIAN	0.030	0.035	0.025	0.036	0.030	0.063
Recovery*AIAN	-0.002	0.028	-0.005	0.028	-0.021	0.063
Pre-Recession*AIAN	0.000	.	0.000	.	0.000	.
Recession*Asian	**-0.082**	0.037	**-0.075**	0.037	-0.045	0.045
Recovery*Asian	-0.020	0.030	-0.019	0.030	0.024	0.038
Pre-Recession*Asian	0.000	.	0.000	.	0.000	.
Recession*Black	**0.042**	0.017	**0.047**	0.017	**0.122**	0.030
Recovery*Black	0.037	0.014	**0.039**	0.014	**0.078**	0.026
Pre-Recession*Black	0.000	.	0.000	.	0.000	.
Recession*White	0.000	.	0.000	.	0.000	.
Recovery*White	0.000	.	0.000	.	0.000	.
Pre-Recession*White	0.000	.	0.000	.	0.000	.
Predisposing and Enabling Characteristics						
Sex						
Male	**-0.277**	0.004	**-0.277**	0.004	**-0.277**	0.004
Female	0.000	.	0.000	.	0.000	.
Age	**-0.009**	0.000	**-0.009**	0.000	**-0.009**	0.000
Income						
Missing/Don't Know	**0.045**	0.007	**0.045**	0.007	**0.045**	0.007
< $15,000	**0.560**	0.008	**0.559**	0.008	**0.560**	0.008

$15 – 25,000	**0.324**	0.006	**0.324**	0.006	**0.324**	0.006
$25 – 35,000	**0.181**	0.007	**0.181**	0.007	**0.181**	0.007
$35 – 50,000	**0.115**	0.006	**0.115**	0.006	**0.115**	0.006
>$50,000 (ref.)	0.000	.	0.000	.	0.000	.
Education						
Some High School	**0.079**	0.008	**0.080**	0.008	**0.080**	0.008
High School Graduate	**-0.048**	0.005	**-0.048**	0.005	**-0.048**	0.005
Some College	**0.016**	0.005	**0.016**	0.005	**0.017**	0.005
College Graduate (ref.)	0.000	.	0.000	.	0.000	.
Insurance						
Not Insured	**-0.080**	0.006	**-0.080**	0.006	**-0.080**	0.006
Insured (ref.)	0.000	.	0.000	.	0.000	.
Employment						
Unemployed	**0.115**	0.008	**0.115**	0.008	**0.115**	0.008
Neither Employed or Unemployed	**0.265**	0.005	**0.265**	0.005	**0.265**	0.005
Employed (ref.)	0.000	.	0.000	.	0.000	.
Rurality						
Non-Metro	**-0.048**	0.005	**-0.049**	0.005	**-0.048**	0.005
MISSING	**-0.080**	0.006	**-0.080**	0.006	**-0.080**	0.006
Metro	0.000	.	0.000	.	0.000	.
Need characteristics						
Disability						
Disabled	**1.602**	0.005	**1.602**	0.005	**1.602**	0.005
Not Disabled	0.000	.	0.000	.	0.000	.
Diabetes						
Diabetes	**0.612**	0.007	**0.612**	0.007	**0.612**	0.007
No Diabetes	0.000	.	0.000	.	0.000	.
Random Effects:						
State (Intercept)	0.006	0.001	0.006	0.001	0.006	0.001
Medicaid Generosity for Parents						
Medicaid Generosity <100% FPL	**0.032**	0.009	-0.005	0.011	-0.012	0.011
Medicaid Generosity ≥100% FPL	0.000	.	0.000	.	0.000	.
Poverty Rate	-0.098	0.295	-0.111	0.284	-0.109	0.284
Unemployment Rate	0.001	0.001	0.002	0.001	0.002	0.001

Time-Period*Medicaid Generosity						
RECOVERY*Eligibility <100% FPL			**0.065**	0.011	**0.080**	0.012
RECOVERY*Eligibility ≥100% FPL			0.000	.	0.000	.
RECESSION*Eligibility <100% FPL			**0.028**	0.009	**0.037**	0.010
RECESSION*Eligibility ≥100% FPL			0.000	.	0.000	.
PRE-RECESSION*Eligibility <100% FPL			0.000	.	0.000	.
PRE-RECESSION*Eligibility ≥100% FPL			0.000	.	0.000	.
Race*Medicaid Generosity						
OTHER *Eligibility <100% FPL			**-0.041**	0.020	-0.012	0.028
OTHER* Eligibility ≥100% FPL			0.000	.	0.000	.
AIAN * Eligibility <100% FPL			-0.005	0.031	-0.009	0.048
AIAN* Eligibility ≥100% FPL			0.000	.	0.000	.
ASIAN * Eligibility <100% FPL			**-0.086**	0.029	-0.034	0.042
ASIAN* Eligibility ≥100% FPL			0.000	.	0.000	.
BLACK * Eligibility <100% FPL			**0.063**	0.014	**0.107**	0.022
BLACK* Eligibility ≥100% FPL			0.000	.	0.000	.
WHITE * Eligibility <100% FPL			0.000	.	0.000	.
WHITE* Eligibility ≥100% FPL			0.000	.	0.000	.
Race*Time-Period*Medicaid Generosity						
OTHER*RECOVERY*Eligibility <100% FPL					-0.056	0.061
OTHER*RECOVERY* Eligibility ≥100% FPL					0.000	.
OTHER*RECESSION*Eligibility <100% FPL					-0.057	0.042

OTHER*RECESSION* Eligibility ≥100% FPL					0.000	.
OTHER*PRE-RECESSION*Eligibility <100% FPL					0.000	.
OTHER*PRE-RECESSION* Eligibility ≥100% FPL					0.000	.
AIAN*RECOVERY*Eligibility <100% FPL					-0.011	0.077
AIAN*RECOVERY* Eligibility ≥100% FPL					0.000	.
AIAN*RECESSION*Eligibilit y <100% FPL					0.020	0.071
AIAN*RECESSION* Eligibility ≥100% FPL					0.000	.
AIAN*PRE-RECESSION*Eligibility <100% FPL					0.000	.
AIAN*PRE-RECESSION* Eligibility ≥100% FPL					0.000	.
ASIAN*RECOVERY*Eligibili ty <100% FPL					-0.066	0.080
ASIAN*RECOVERY* Eligibility ≥100% FPL					0.000	.
ASIAN*RECESSION*Eligibili ty <100% FPL					-0.111	0.063
ASIAN*RECESSION* Eligibility ≥100% FPL					0.000	.
ASIAN*PRE-RECESSION*Eligibility <100% FPL					0.000	.
ASIAN*PRE-RECESSION* Eligibility ≥100% FPL					0.000	.
BLACK*RECOVERY*Eligibil ity <100% FPL					**-0.113**	0.037
BLACK*RECOVERY* Eligibility ≥100% FPL					0.000	.
BLACK*RECESSION*Eligibil ity <100% FPL					-0.053	0.031
BLACK*RECESSION* Eligibility ≥100% FPL					0.000	.
BLACK*PRE-RECESSION*Eligibility <100% FPL					0.000	.
BLACK*PRE-RECESSION* Eligibility ≥100% FPL					0.000	.

WHITE*RECOVERY*Eligibility <100% FPL					0.000	.
WHITE*RECOVERY* Eligibility ≥100% FPL					0.000	.
WHITE*RECESSION*Eligibility <100% FPL					0.000	.
WHITE*RECESSION* Eligibility ≥100% FPL					0.000	.
WHITE*PRE-RECESSION*Eligibility <100% FPL					0.000	.
WHITE*PRE-RECESSION* Eligibility ≥100% FPL					0.000	.

Note: Bolded type face indicates significant ≤ .05 (p-value)

Table E.4D. Factors associated with reporting one or more poor physical health days among working age adults, 2004 – 2010 BRFSS: Medicaid Generosity for Childless adults

	Model 4: Coef(SE)		Model 5:		Model 6	
Intercept	**-1.002**	0.051	**-0.984**	0.052	**-0.982**	0.052
Fixed Effects						
Race						
Other	**-0.218**	0.011	**-0.245**	0.029	**-0.255**	0.038
AIAN	**0.062**	0.016	-0.022	0.029	-0.031	0.036
Asian	**-0.207**	0.018	**-0.183**	0.063	**-0.182**	0.090
Black	**-0.080**	0.008	-0.014	0.031	**-0.138**	0.056
White (ref.)	0.000	.	0.000	.	0.000	.
Time Period						
Recovery	**-0.062**	0.008	**-0.100**	0.016	**-0.106**	0.017
Recession	**0.012**	0.005	0.000	0.013	-0.006	0.013
Pre-Recession (ref.)	0.000	.	0.000	.	0.000	.
Time-Period*Race						
Recession*Other	0.027	0.029	0.035	0.029	0.051	0.077
Recovery*Other	**0.119**	0.019	**0.122**	0.019	**0.141**	0.059
Pre-Recession*Other	0.000	.	0.000	.	0.000	.
Recession*AIAN	0.022	0.033	0.025	0.033	0.040	0.076
Recovery*AIAN	-0.007	0.026	-0.005	0.026	0.015	0.060
Pre-Recession*AIAN	0.000	.	0.000	.	0.000	.
Recession*Asian	-0.069	0.035	-0.056	0.035	-0.013	0.163
Recovery*Asian	-0.008	0.028	-0.002	0.028	-0.032	0.138
Pre-Recession*Asian	0.000	.	0.000	.	0.000	.
Recession*Black	0.037	0.017	0.031	0.017	**0.194**	0.078
Recovery*Black	**0.030**	0.013	**0.027**	0.013	**0.206**	0.071
Pre-Recession*Black	0.000	.	0.000	.	0.000	.
Recession*White	0.000	.	0.000	.	0.000	.
Recovery*White	0.000	.	0.000	.	0.000	.
Pre-Recession*White	0.000	.	0.000	.	0.000	.
Predisposing and Enabling Characteristics						
Sex						
Male	**-0.276**	0.003	**-0.276**	0.003	**-0.276**	0.003
Female	0.000	.	0.000	.	0.000	.
Age	**-0.009**	0.000	**-0.009**	0.000	**-0.009**	0.000
Income						
Missing/Don't Know	**0.044**	0.006	**0.044**	0.006	**0.044**	0.006
< $15,000	**0.559**	0.007	**0.559**	0.007	**0.559**	0.007
$15 – 25,000	**0.328**	0.006	**0.328**	0.006	**0.328**	0.006

$25 – 35,000	**0.183**	0.006	**0.183**	0.006	**0.183**	0.006
$35 – 50,000	**0.114**	0.005	**0.114**	0.005	**0.114**	0.005
>$50,000 (ref.)	0.000	.	0.000	.	0.000	.
Education						
Some High School	**0.078**	0.007	**0.078**	0.007	**0.077**	0.007
High School Graduate	**-0.051**	0.005	**-0.051**	0.005	**-0.051**	0.005
Some College	**0.018**	0.004	**0.018**	0.004	**0.018**	0.004
College Graduate (ref.)	0.000	.	0.000	.	0.000	.
Insurance						
Not Insured	**-0.084**	0.005	**-0.084**	0.005	**-0.084**	0.005
Insured (ref.)	0.000	.	0.000	.	0.000	.
Employment						
Unemployed	**0.119**	0.007	**0.119**	0.007	**0.119**	0.007
Neither Employed or Unemployed	**0.262**	0.004	**0.262**	0.004	**0.262**	0.004
Employed (ref.)	0.000	.	0.000	.	0.000	.
Rurality						
Non-Metro	**-0.047**	0.004	**-0.047**	0.004	**-0.046**	0.004
MISSING	**-0.075**	0.006	**-0.075**	0.006	**-0.075**	0.006
Metro	0.000	.	0.000	.	0.000	.
Need characteristics						
Disability						
Disabled	**1.611**	0.004	**1.611**	0.004	**1.611**	0.004
Not Disabled	0.000	.	0.000	.	0.000	.
Diabetes						
Diabetes	**0.616**	0.006	**0.616**	0.006	**0.616**	0.006
No Diabetes	0.000	.	0.000	.	0.000	.
Random Effects:						
State (Intercept)	0.005	0.001	0.005	0.001	0.005	0.001
Medicaid Generosity						
No Coverage for Childless Adults	-0.007	0.013	-0.023	0.016	-0.026	0.016
Medicaid Generosity of Childless Adults Eligibility <133%FPL	0.049	0.031	0.047	0.033	0.047	0.033
Medicaid Generosity of Childless Adults Eligibility ≥133%FPL	0.000	.	0.000	.	0.000	.
Poverty Rate	-0.108	0.257	-0.122	0.258	-0.122	0.258

Unemployment Rate	0.001	0.001	0.001	0.001	0.001	0.001
Time-Period*Medicaid Generosity						
RECOVERY*No Coverage			**0.052**	0.016	**0.058**	0.017
RECOVERY* Eligibility <133%FPL			-0.007	0.021	0.003	0.023
RECOVERY*Eligibility ≥133%FPL			0.000	.	0.000	.
RECESSION*NO COVERAGE			0.017	0.013	0.026	0.014
RECESSION* Eligibility <133%FPL			-0.008	0.017	-0.014	0.018
RECESSION*Eligibility ≥133%FPL			0.000	.	0.000	.
PRE-RECESSION*NO COVERAGE			0.000	.	0.000	.
PRE-RECESSION* Eligibility <133%FPL			0.000	.	0.000	.
PRE-RECESSION*Eligibility ≥133%FPL			0.000	.	0.000	.
RACE*MEDICAID GENEROSITY						
OTHER * NO COVERAGE L			0.023	0.029	0.037	0.041
OTHER* Eligibility <133%FPL			0.061	0.035	0.055	0.047
OTHER*Eligibility ≥133%FPL			0.000	.	0.000	.
AIAN * NO COVERAGE			**0.101**	0.030	**0.114**	0.041
AIAN* Eligibility <133%FPL			**0.108**	0.049	0.102	0.065
AIAN*Eligibility ≥133%FPL			0.000	.	0.000	.
ASIAN * NO COVERAGE			-0.053	0.063	-0.051	0.093
ASIAN* Eligibility <133%FPL			0.027	0.066	0.018	0.095
ASIAN*Eligibility ≥133%FPL			0.000	.	0.000	.
BLACK * NO COVERAGE			**-0.060**	0.031	0.068	0.057
BLACK* Eligibility <133%FPL			**-0.127**	0.036	-0.014	0.062
BLACK*Eligibility ≥133%FPL			0.000	.	0.000	.
WHITE * NO COVERAGE			0.000	.	0.000	.

WHITE* Eligibility <133%FPL			0.000	.	0.000	.
WHITE*Eligibility ≥133%FPL			0.000	.	0.000	.
RACE*TIME-PERIOD*GENEROSITY						
OTHER*RECOVERY*NO COVERAGE					-0.016	0.084
OTHER*RECOVERY* Eligibility <133%FPL					-0.029	0.102
OTHER*RECOVERY* Eligibility ≥133%FPL					0.000	.
OTHER*RECESSION* NO COVERAGE					-0.035	0.063
OTHER*RECESSION* Eligibility <133%FPL					0.043	0.076
OTHER*RECESSION* Eligibility ≥133%FPL					0.000	.
OTHER*PRE-RECESSION*NO COVERAGE					0.000	.
OTHER*PRE-RECESSION* Eligibility <133%FPL					0.000	.
OTHER*PRE-RECESSION* Eligibility ≥133%FPL					0.000	.
AIAN*RECOVERY*NO COVERAGE					-0.012	0.085
AIAN*RECOVERY* Eligibility <133%FPL					-0.069	0.139
AIAN*RECOVERY* Eligibility ≥133%FPL					0.000	.
AIAN*RECESSION* NO COVERAGE					-0.034	0.068
AIAN*RECESSION* Eligibility <133%FPL					0.062	0.110
AIAN*RECESSION* Eligibility ≥133%FPL					0.000	.
AIAN*PRE-RECESSION*NO COVERAGE					0.000	.
AIAN*PRE-RECESSION* Eligibility <133%FPL					0.000	.
AIAN*PRE-RECESSION* Eligibility ≥133%FPL					0.000	.
ASIAN*RECOVERY*NO COVERAGE					-0.035	0.169
ASIAN*RECOVERY* Eligibility <133%FPL					-0.068	0.174

ASIAN*RECOVERY* Eligibility ≥133%FPL					0.000	.
ASIAN*RECESSION* NO COVERAGE					0.012	0.143
ASIAN*RECESSION* Eligibility <133%FPL					0.066	0.146
ASIAN*RECESSION* Eligibility ≥133%FPL					0.000	.
ASIAN*PRE-RECESSION*NO COVERAGE					0.000	.
ASIAN*PRE-RECESSION* Eligibility <133%FPL					0.000	.
ASIAN*PRE-RECESSION* Eligibility ≥133%FPL					0.000	.
BLACK*RECOVERY*NO COVERAGE					**-0.167**	0.080
BLACK*RECOVERY* Eligibility <133%FPL					-0.180	0.094
BLACK*RECOVERY* Eligibility ≥133%FPL					0.000	.
BLACK*RECESSION* NO COVERAGE					**-0.192**	0.073
BLACK*RECESSION* Eligibility <133%FPL					-0.135	0.083
BLACK*RECESSION* Eligibility ≥133%FPL					0.000	.
BLACK*PRE-RECESSION*NO COVERAGE					0.000	.
BLACK*PRE-RECESSION* Eligibility <133%FPL					0.000	.
BLACK*PRE-RECESSION* Eligibility ≥133%FPL					0.000	.
WHITE*RECOVERY*NO COVERAGE					0.000	.
WHITE*RECOVERY* Eligibility <133%FPL					0.000	.
WHITE*RECOVERY* Eligibility ≥133%FPL					0.000	.
WHITE*RECESSION* NO COVERAGE					0.000	.
WHITE*RECESSION* Eligibility <133%FPL					0.000	.
WHITE*RECESSION* Eligibility ≥133%FPL					0.000	.
WHITE*PRE-RECESSION*NO COVERAGE					0.000	.

WHITE*PRE-RECESSION* Eligibility <133%FPL					0.000	.
WHITE*PRE-RECESSION* Eligibility ≥133%FPL					0.000	.

Note: Bolded type face indicates significant ≤ .05 (p-value)